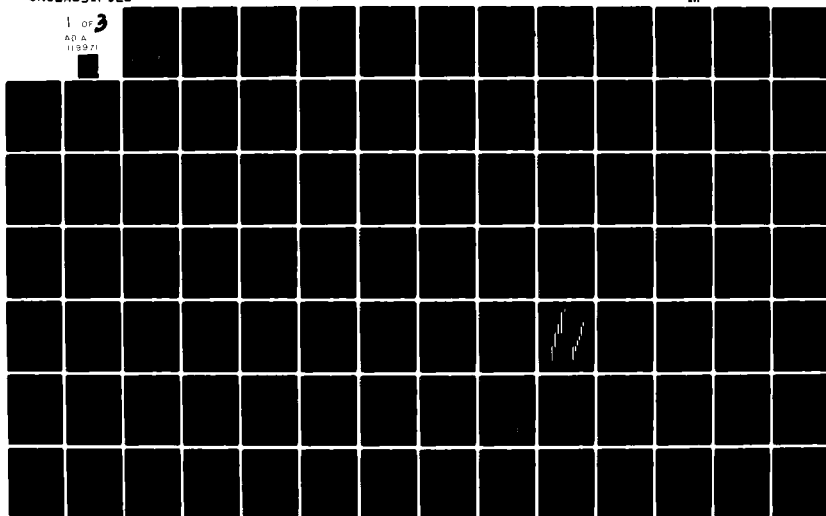


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Final Report

A CULTURAL RESOURCES INVENTORY OF THE
PEARL RIVER BASIN, LOUISIANA AND MISSISSIPPI

VOLUME I

Prepared for:

U. S. Army Corps of Engineers
P. O. Box 2288
Mobile, Alabama 36628

Under Contract #DACW01-81-C-0066

Prepared by:

Heartfield, Price and Greene, Inc.

April, 1982

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A119 971	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) A Cultural Resources Inventory of the Pearl River Basin, Louisiana and Mississippi (2 volumes)		5. TYPE OF REPORT & PERIOD COVERED Final Report 1980-1982
7. AUTHOR(s) Bill Moore		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Heartfield, Price and Greene Monroe, Louisiana 71201		8. CONTRACT OR GRANT NUMBER(s) DACW01-81-C-0066
11. CONTROLLING OFFICE NAME AND ADDRESS Mobile District, US Army Corps of Engineers SAMPD-EC P.O. Box 2288, Mobile, AL 36628		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE April 1982
		13. NUMBER OF PAGES 321
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release, distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Cultural resources, inventory, archeology, history, maps		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) ✓ Heartfield, Price and Greene, Inc. of Monroe, Louisiana, was contracted by the United States Corps of Engineers, Mobile District to perform a literature search of a one-mile-wide corridor adjacent to the Pearl River south of Ross Barnett Reservoir. This report has collected and synthesized geological, archeological, ethnographic and historic data pertaining to the study area. (Continued on reverse side)		

Block 20. Abstract continued.

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Research problems and gaps in the literature are discussed. Recommendations and future goals for the study area are presented and an annotated bibliography is provided.



HEARTFIELD, PRICE AND GREENE, INC.

802 North 31st Street
Monroe, Louisiana 71201
(318) 388-4754

6621 Wharton
Houston, Texas 77055
(713) 688-3933

LORRAINE HEARTFIELD, Ph.D.
G.R. DENNIS PRICE, B.A. (Hons.)
GLEN S. GREENE, Ph.D.

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G. R. Dennis Price
Principal Investigator

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This study has revealed that very little research regarding the cultural resources of the corridor has been done. Human use of the area has been documented for all of the major periods of prehistory except Coles Creek. In many cases, however, only a few sites provide the evidence for these time periods.

Research problems and gaps in the literature are discussed. Recommendations and future goals for the study area are presented and an annotated bibliography is provided.

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ACKNOWLEDGEMENTS

Heartfield, Price and Greene, Inc., would like to express its appreciation to those individuals whose assistance and encouragement made possible the completion of this manuscript. Information concerning the prehistory of the study area was provided by the following: Dr. Richard Beavers (University of New Orleans), Dr. Jeffrey Brain (Harvard University), Dr. Kathleen Byrd (Department of Archeology and Historic Preservation, Baton Rouge), Dr. Dave Davis (Tulane University), James Lauro (Mississippi Department of Archives and History), Sam McGahey (Mississippi Department of Archives and History), Richard Marshall (Cobb Institute, Mississippi State University), Robert Neuman (Louisiana State University), Phillip G. Rivet (Department of Archeology and Historic Preservation, Baton Rouge), Dr. Robert Thorne (University of Mississippi) and Richard Weinstein (Coastal Environments, Inc., Baton Rouge).

Assistance with the history of the study area was provided by Bill Allen (Mississippi Department of Archives and History), Joe Frank (Lake Charles, Louisiana), Dr. Patricia Galloway (Mississippi Department of Archives and History), Dwight Harris (Mississippi Department of Archives and History), Dr. Nollie Hickman (Professor of History, Northeast Louisiana University - Retired), Jessica Kimm (Department of Archeology and Historic Preservation, Baton Rouge), Dr. Scotty Leagan (Northeast Louisiana University), Dr. E. Russ Williams (Northeast Louisiana University) and Bill Wright (Mississippi Department of Archives and History).

The Contracting Agency was very helpful throughout the project. Dottie Gibbens gave much of her time to the project and her help created a most pleasant working atmosphere.

The environmental background research was compiled by Gary Stringer and Edward Beene. The cultural resources portion of the report was researched and synthesized by Bill Moore. Editorial and organizational advice was provided by Ellen Blue. The manuscript was typed by Judy Hartley and Sharon Acklen. Illustrations were drafted by Don Loper and David Hovde.

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1. INTRODUCTION

Heartfield, Price and Greene, Inc. of Monroe, Louisiana, was contracted by the U. S. Army Corps of Engineers, Mobile District, to conduct a cultural resources survey of the Pearl River, under contract #DACW01-81-C-0066.

The objective of this study, an extensive literature search, was to locate, inventory and plot onto quadrangle maps the previously recorded archeological, historic and ethnographic resources in the study area. A list of quadrangle maps utilized in this study is presented in Appendix A. These data were to be used to create a synthesis of the culture history (prehistoric and historic) of the study area.

Personnel involved in the cultural resources inventory of the Pearl River Basin included G. R. Dennis Price, Principal Investigator and William E. Moore, Project Director.

1.1 Study Area

The study area (Figure 1-1) includes a one-mile-wide corridor along the Pearl River from the Ross Barnett Reservoir to the mouth of the river. Counties and parishes located in this corridor include Copiah County, Hancock County, Hinds County, Jefferson Davis County, Lawrence County, Madison County, Marion County, Pearl River County, Rankin County and Simpson County, in Mississippi, and St. Tammany and Washington Parishes in Louisiana. Additional counties located in the Pearl River Basin are Lamar County, Lincoln County and Pike County, Mississippi.

1.2 Problems Encountered

Several problems were encountered during the course of this study. Some sites possessing official state numbers have not been plotted on United States Geological Survey (U.S.G.S.) maps at the state offices. At some of the institutions checked, U.S.G.S. maps were not available, making it impossible to search for site locations. Open circles (indicating site locations) and references to surveys were found on several U.S.G.S. maps with no mention of them in the official files. Duplicate site numbers and incomplete site forms were also discovered.

1.3 Survey Methodology

Three categories of resources were included in the study: 1) sites on the National Register of Historic Places; 2) archeological sites and historical sites not on the National Register of Historic Places; and 3) general information concerning the archeology and history of the study area. The National Register of Historic Places and its supplements and the Federal Register were checked for listed sites within the study area.

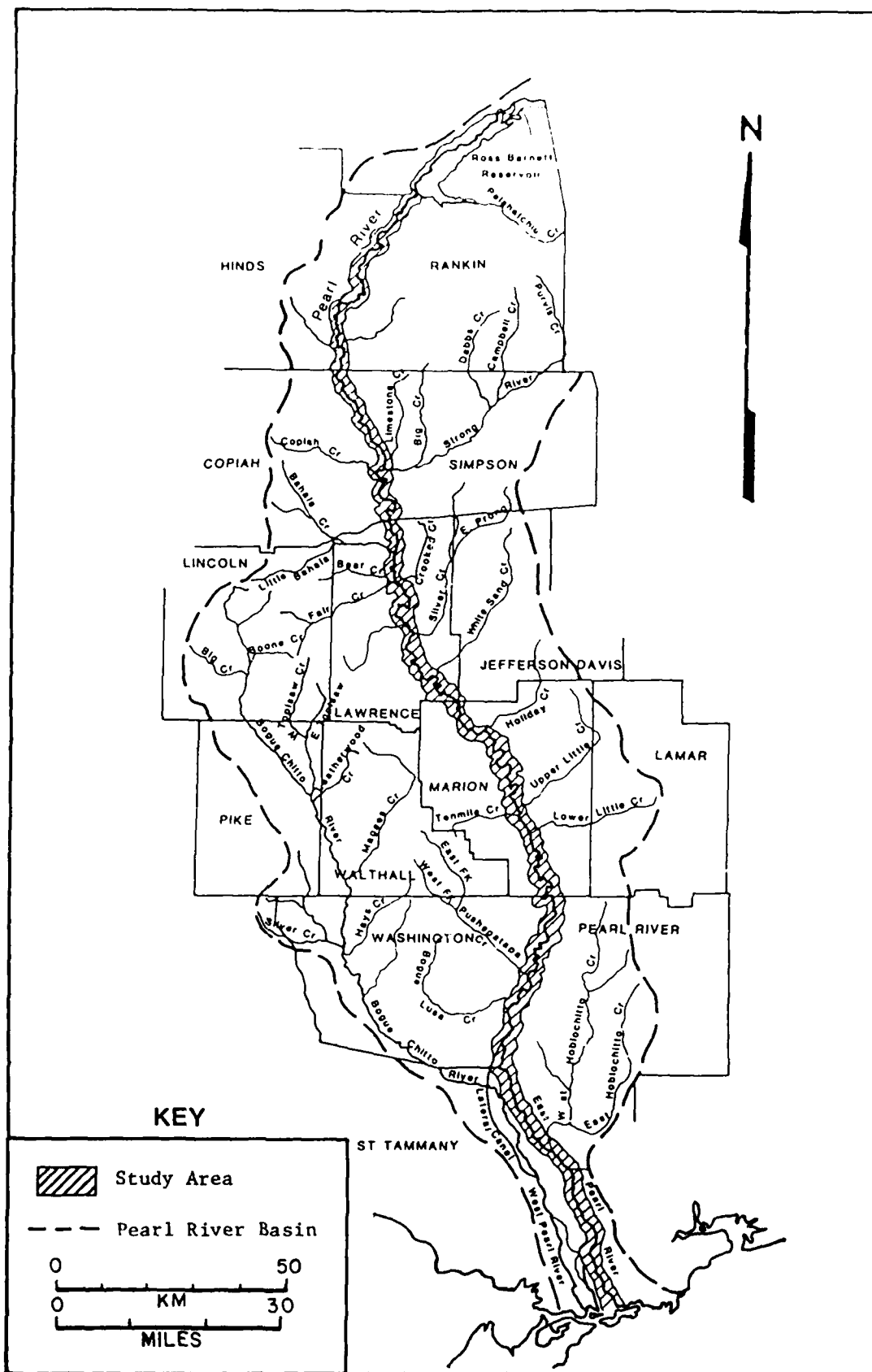


Figure 1-1. Study Area

The Mississippi Department of Archives and History, Jackson, Mississippi, and the Department of Culture, Recreation and Tourism, Division of Archeology and Historic Preservation, Baton Rouge, Louisiana were consulted for information about sites which might have been nominated recently to the National Register of Historic Places.

The category "Archeological Sites Not on the National Register of Historic Places" includes prehistoric and historic sites. Data concerning this category were obtained by checking the archeological records of the Mississippi Department of Archives and History, Jackson, Mississippi; the Department of Culture, Recreation and Tourism, Division of Archeology and Historic Preservation, Baton Rouge, Louisiana; departments of anthropology at various universities; and private archeological consulting firms. A list of the institutions contacted in this study is presented in Appendix B. Archeological reports pertaining to the study area were also utilized.

Information concerning the archeology of the study area was obtained by interviews with state archeologists and archeologists employed by universities and private agencies (Appendix B); correspondence with amateur archeological societies (Appendix B) and the perusal of journals (Appendix C), books, and relevant site reports.

The historical overview of the Pearl River Basin is a compilation of information collected from various sources. Historical societies in Louisiana and Mississippi were contacted (Appendix D); university, state, and county/parish libraries were visited (Appendix E) and all county/parish libraries in the basin were contacted by telephone (Appendix F). Major historical journals were searched for relevant articles (Appendix C) and old maps were studied (Appendix G). An attempt was made to locate earlier editions of U.S.G.S. quadrangle maps. Unfortunately, none could be found during the time allowed for this study. We believe that copies exist and would provide additional information for the study area. A search was made in Jackson, Mississippi for land entry records. These records were not centrally located and it was beyond the scope of this study to visit every courthouse in the Pearl River Basin to obtain these data. Interviews were conducted with personnel at the Mississippi Department of Archives and History, Jackson, Mississippi, the Department of Culture, Recreation and Tourism, Division of Archeology and Historic Preservation, Baton Rouge, Louisiana (Appendix B), as well as other individuals (Appendix H). All sources dealing specifically with the study corridor, as well as certain other works relating to the Pearl River Basin, have been annotated in Appendix I.

2. ENVIRONMENTAL SETTING

2.1 Physiography

The Pearl River Basin of Mississippi lies within the Gulf Coastal Plain province of North America. The Gulf Coastal Plain province is a segment of the Mesozoic-Cenozoic coastal geosyncline of eastern North America (Murray 1960). It covers more than 150,000 square miles and contains predominantly arenaceous-argillaceous, marginal to shallow-marine strata to a depth of 50,000 feet. The geosynclinal mass overlies Precambrian-Paleozoic rocks of variable facies, structure and degree of metamorphism. The top surface of the strata possesses an overall slope towards the Gulf of Mexico.

Priddy (1960) has identified 12 physiographic units in Mississippi: the Paleozoic Bottoms, the Tombigbee Hills, the Black Prairie, the Pontotoc Ridge, the Flatwoods, the North Central Hills, the Jackson Prairie, the Vicksburg Hills, the Piney Woods, the Loess Hills, the Yazoo Basin and the Coastal Meadows. Of these, five are found in the Pearl River Basin (the North Central Hills, the Jackson Prairie, the Vicksburg Hills, the Piney Woods, and the Coastal Meadows). Only four (Jackson Prairie, the Vicksburg Hills, the Piney Woods and the Coastal Meadows) occur within the present project area (Figure 2-1).

The number and unusual variety of physiographic features in Mississippi are due to the 1) southwest dip of the strata, 2) the differences in resistance of the various beds of sandstones, marls, shales and clays, 3) the various geological processes and 4) the stage of erosion accomplished by these processes.

2.1.1 North Central Hills

Only a small portion of the study area (the southeastern portion of Madison County near Canton and the Ross Barnett Reservoir) is located in the North Central Hills physiographic province (Ibid).

This large physiographic province covers almost one-fifth of Mississippi. Fisk (1944) referred to the area as the Eastern Hills. The North Central Hills is located east of the Loess Hills, west of the Flatwoods and north of the Jackson Prairie (Priddy 1960). In most of Mississippi, the North Central Hills have been carved from sands, silts, silty clays, claystones and marls. However, in Madison County, at the southwest edge of the North Central Hills, the claystones and marls are largely absent.

Within the study area, the North Central Hills are developed on the Upper Claiborne age, Cockfield Formation. The beds of the Cockfield are 360 to 400 feet in thickness and have diverse lithologies. The diverse lithology and some faulting results in a great variety of physiographic

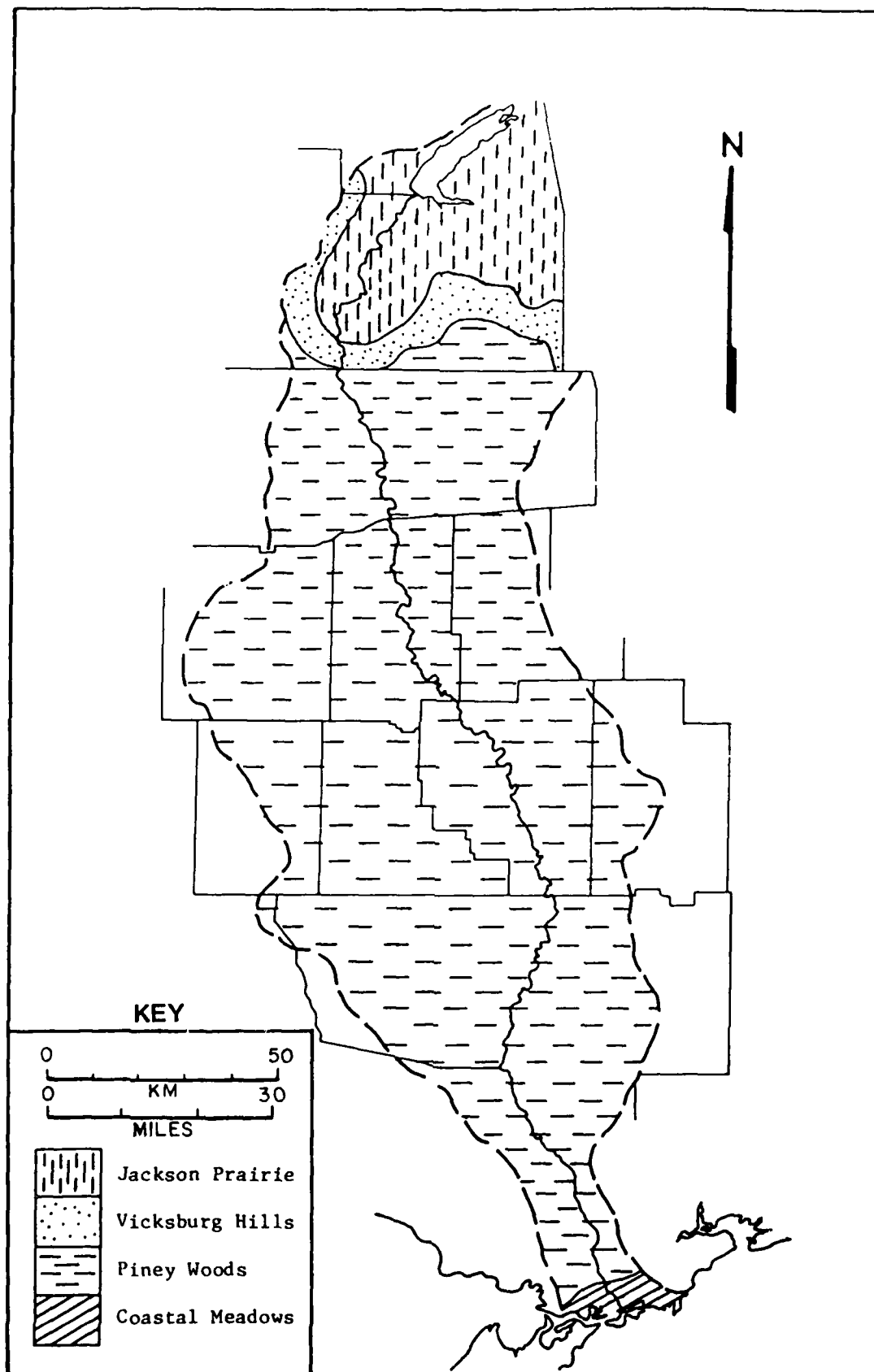


Figure 2-1. Physiographic Provinces.

features. Steep ridges and deep, narrow valleys have been carved in massive sands. Sharp, but low, hills have been cut in thin-bedded silts and sandy silts. Broad, low hills have been formed by erosion of massive clays.

A unique feature of the North Central Hills, a cuesta, is present near Canton in Madison County. A cuesta is a ridge which was formed by gently dipping strata more resistant to weathering than the beds above and below. The cuesta in Madison County was formed by the more resistant Moodys Branch and the less resistant, underlying Cockfield and overlying Yazoo Clay (Ibid).

The topography in the portion of the North Central Hills in the study area ranges from approximately 400 feet above mean sea level (A.M.S.L.) in the southeastern corner of Madison County to less than 250 feet A.M.S.L. around Walnut Creek and Dry Creek. Broad, flat swamps characterize the area around the Pearl River. These swampy bottoms (some of which are cultivated) are up to three miles in width. However, many of the swampy areas have been greatly reduced by the building of the Ross Barnett Reservoir (Ibid).

2.1.2 Jackson Prairie

The Jackson Prairie physiographic province is a northwest-southeast trending belt. At its widest point, it is approximately 40 miles wide (Ibid). It is located east of the Loess Hills, south of the North Central Hills and north of the Vicksburg Hills.

The majority of Rankin County and the majority of Hinds County in the study area are located in the Jackson Prairie. The Jackson Prairie was developed on the outcrop area of the massive Yazoo Clay. The Jackson Prairie is characterized by gently rolling terrain with deposits of terrace sands capping some of the higher hills (Baughman 1971).

The Jackson Dome or Uplift exhibits a pronounced effect on the Jackson Prairie and other physiographic units in western Rankin County and eastern Hinds County. If structural conditions were normal with regional dip prevailing, the Yazoo Clay and the Jackson Prairie would not be exposed in Rankin and Hinds County (Ibid).

The topography of Rankin County varies from broad, gently-rounded hills and broad, flat alluvial plains to high, narrow hills and ridges with steep slopes and narrow valleys. The area influenced by the Jackson Dome consists of broad, rounded hills (Ibid).

The topography in Hinds County varies from high, rugged hills with steep slopes and narrow valleys through lower, more rolling hills, wider valleys and gentler slopes, to rather broad, flat alluvial plains (Moore 1965). A prominent ridge runs generally north-south across the eastern one-third of Hinds County. This ridge forms a divide between the Pearl and Big Black River drainage basins. Some of the highest elevations in

the County are found along the southern part of this divide with elevations over 400 feet A.M.S.L. Along this divide, the relief is as much as 150 feet with the western slope of the divide being somewhat steeper than the eastern slope.

2.1.3 Vicksburg Hills

The Vicksburg Hills physiographic province is a very narrow, areally restricted, generally northwestern-southeastern belt extending from Hinds County eastward across the state (Priddy 1960). In the Pearl River Basin, the Vicksburg Hills physiographic unit extends across Hinds County, Rankin County, and a very small part of Simpson County. It is generally less than five miles in width.

This physiographic unit is located east of the Loess Hills, south of the Jackson Prairie and north of the Piney Woods. The Vicksburg Hills belt shares the same northern boundary as the Long Leaf Pine Hills as defined by Lowe (1915). The Vicksburg Hills belt is characterized by a steep slope near the contact of the Yazoo Clay and Forest Hill Formation on the northern edge of the belt and includes that portion underlain by the Vicksburg Group (Oligocene).

Monroe (1954) described the topography of the Vicksburg Hills province as consisting of an abrupt scarp of the Forest Hill cuesta at the northern edge. South of this contact, the province is characterized by a more gentle back slope over the outcropping edges of the Forest Hill Formation sandstones and limestones of other Vicksburg Group Formations.

2.1.4 Piney Woods

The Piney Woods physiographic province is located east of the Loess Hills, south of the Vicksburg Hills and north of the Coastal Meadows (Priddy 1960). The Piney Woods is the most widespread province in the Pearl River Basin covering part or all of the following counties: Rankin, Copiah, Simpson, Lincoln, Lawrence, Jefferson Davis, Pike, Whitehall, Marion, Lamar, Pearl River and Hancock. The province also covers part of Washington and St. Tammany Parishes in Louisiana.

The Piney Woods physiographic province developed mainly on Miocene sediments. In some areas, Pliocene deposits are also present. The topography varies from the northern part, in Copiah and Simpson Counties, to the southern part, in Pearl River and Hancock Counties.

The topography of the northern section is characterized by uplands, rolling hills and lowlands. In the upland areas, topographic features vary from rolling plains to rugged hills. Generally, elevations within the upland areas range from near 300 feet to more than 500 feet A.M.S.L. The upland areas may grade into the rolling hill areas. The rolling hills are products of erosion of the upland areas and are underlain by Miocene strata and some alluvial terrace material. In many areas, the

rolling hills are absent and the rugged upland type topography borders the lowland areas. The lowland areas are composed of the alluvial plains developed by the major streams and their tributaries. Topography is mostly inclined or flat, low plains. Elevations on the Pearl River alluvial plain range from an average of approximately 240 feet A.M.S.L. in the northern part of the Piney Woods (Ibid).

In the southern part of the Piney Woods physiographic province, the elevations are lower. Also, the uplands and rolling hills are not as developed in the southern portion as in the northern area. The alluvial plains and lowlands are more developed. Topography on the alluvial plain is mostly inclined or flat, low plains with small relief features formed by abandoned stream channels, natural levees, terraces, bars, alluvial fans, and other minor features formed by flooding and shifting of stream channels (Ibid).

2.1.5 Coastal Meadows

The Coastal Meadows physiographic province is the southern-most province in Mississippi (Priddy 1960), and also the southern-most physiographic unit in the Pearl River Basin. The Coastal Meadows includes only a small portion of the Pearl River Basin in Hancock County, Mississippi and in St. Tammany Parish, Louisiana. The Coastal Meadows unit is located south of the Piney Woods and consists of a narrow strip along the coast. Elevations are less than 100 feet A.M.S.L. The Coastal Meadows consists of marshes, wetlands and beach areas. The marshlands vary from fresh to brackish to saline.

2.2 Drainage

The study area is delineated by the Pearl River drainage basin. Although some authors subdivide the study area into smaller drainage basins, it consists basically of the Pearl River Basin. For example, Baughman (1971) refers to the Strong River drainage basin in Rankin and Simpson Counties. However, Baughman (Ibid) notes that the Strong River is actually a tributary of the Pearl River. For each county or parish, the major tributaries of the Pearl River are discussed briefly.

The drainage in Madison County is quite unique due to the Big Black-Pearl divide. This physiographic feature lies so close to the Pearl River that 95 percent of the county's drainage is northwest through the large creeks (Love's, Doaks, Tilda, Bogue, Bear, Panther, Persimmon, and Burnt Corn) to the Big Black. Priddy (1960) notes that 25 creeks cut across the Natchez Trace as they enter the Pearl River lowlands. However, many of these creeks are so short and of such little consequence that they have never been named.

The Pearl River, or Ross Barnett Reservoir, receives water from four primary creeks and their tributaries in Rankin County. Fannegusha Creek in north Rankin County flows north-northwest from the vicinity of Leesburg to the Pearl River. Pelahatchie Creek in north-central Rankin

County flows west-northwest from the vicinity of Pelahatchie and flows into the south end of the Ross Barnett Reservoir. Its tributaries include Mulberry Creek, Ashlog Creek, Pierce Creek, Eutacutachee Creek, Snake Creek, Clear Creek, Riley Creek, Brush Creek and Clark Creek. Richland Creek flows west-northwest from east of Brandon across west-central Rankin County to the Pearl River. Steen Creek in southwest Rankin County flows from north of Star westward to the Pearl River.

Several creeks in Rankin County flow into other drainages in other counties before eventually flowing into the Pearl River. Dobbs Creek in the southern part of Rankin County flows into the Strong River in Simpson County. Thompson Creek is the main tributary of Dobbs Creek in Rankin County. Campbell Creek also flows into the Strong River in Simpson County. Brushy Creek in the southeast corner of Rankin County flows into the Strong River. Billy Walker Creek and Purvis Creek flow into the Strong River in Smith County (Baughman 1971).

Drainage in Hinds County is characterized by several creeks which flow eastward into the Pearl River. Hanging Moss Creek, Hardy Creek, Big Creek, Lynch Creek, Carey Creek and several smaller creeks drain the area in and around the city of Jackson and are tributaries of the Pearl. South of Jackson, the Trahon, the Big Rhodes, Vaughn and Beaverdam Creeks and their tributaries flow eastward into the Pearl River (Moore 1965).

The Pearl River drains about 40 percent of Copiah County (Bicker 1969). Bahala Creek, Copiah Creek and Brushy Creek are the major tributaries of the Pearl River in Copiah County (Ibid). Numerous smaller tributaries drain into the Pearl. These include Hickory Creek, Haley Creek, Steel Creek, Indian Creek and Pegies Creek. Many of these smaller streams have established base flows fed by springs developed in the Citronelle and terrace deposits (Ibid).

The major tributary of the Pearl River in Simpson County is the Strong River. Tributaries of the Strong River include Big Creek, Dobbs Creek, Campbell Creek and Purvis Creek. Other tributaries of the Pearl River in Simpson County are Limestone Creek, Rocky Creek and Vaughn's Creek.

The Pearl River receives numerous tributaries in Lawrence County, some of which originate in other counties. Examples of these are Bahala Creek, Little Bahala and East Prong. Other tributaries of the Pearl in Lawrence County include Bear Creek, Fair River, Halls Creek, Coopers Creek, White Sand Creek and Silver Creek. Silver Creek and White Sand Creek actually originate in Simpson and Jefferson Davis Counties respectively.

There are four major tributaries of the Pearl River in Marion County. These are Holiday Creek, Tenmile Creek, Upper Little Creek and the Lower Little Creek.

Pushepatapa Creek and Bogue Lusa Creek are the two major tributaries of the Pearl River in Washington Parish, Louisiana. Pushepatapa Creek

has two major tributaries, East Fork and West Fork. These two creeks originate in Walthall County. The Bogue Chitto River flows through Washington County but empties into the Pearl in St. Tammany Parish, Louisiana. Tributaries of the Bogue Chitto River include Leatherwood Creek, Magees Creek, Hays Creek, Little Silver Creek and numerous unnamed tributaries.

Two main tributaries of the Pearl River are found in Pearl River County. These main tributaries are the West Hobolochitto Creek and the East Hobolochitto Creek. These creeks flow together in the southwestern portion of Pearl River County and empty into the Pearl River. The major tributary of the Pearl River in Hancock County is Mikes River.

2.3 Geology

The exposed strata in the middle and lower Pearl River Basin consist entirely of Cenozoic sediments. Tertiary and Quaternary formations characterize the study area (Figure 2-2). The following formations are exposed in the study area: Cockfield (Eocene), Moodys Branch (Eocene), Yazoo Clay (Eocene), Forest Hill Formation (Oligocene), Mint Spring Formation (Oligocene), Glendon Limestone (Oligocene), Bucatunna Clay (Oligocene), Catahoula (Miocene), Hattiesburg (Miocene), Citronelle Formation (Pliocene), Bentley (Pleistocene), Montgomery (Pleistocene), Prairie (Pleistocene) and alluvium (Recent). A general description of these formations is given below:

2.3.1 Cockfield

The Cockfield Formation belongs to the Claiborne Group (Eocene) and represents the oldest sediments in the study area. The Cockfield consists of gray, silty, carbonaceous, micaceous clays; gray, very fine to fine-grained, silty sands; and thin beds of lignite (Moore 1965). On the weathered outcrops, the sands, silts and clays are gray, brown and buff.

The Cockfield is exposed in Madison and Hinds County in the study area. The Cockfield is approximately 550 feet in thickness and is overlain disconformably by the Moodys Branch Formation. The disconformity is characterized by fragments of Cockfield clays reworked into the basal Moodys Branch by a sharp change from Cockfield silty clays to Moodys Branch limy sands and by borings in the upper Cockfield filled with glauconitic, fossiliferous sand of the overlying Moodys Branch.

2.3.2 Moodys Branch

The Moodys Branch Formation belongs to the Jackson Group (Eocene) and is exposed in the northern part of the study area (Madison and Hinds County). The Moodys Branch is a very limy, fossiliferous, clayey,

ERA	PERIOD	EPOCH	GROUP	FORMATION
CENOZOIC	QUATERNARY	HOLOCENE (Recent)		ALLUVIUM
		PLEISTOCENE		PRAIRIE
				MONTGOMERY
				BENTLEY
	TERTIARY	PLIOCENE		CITRONELLE FORMATION
		MIOCENE	GRAND GULF	HATTIESBURG
				CATAHOULA
		OLIGOCENE	VICKSBURG	BUCATUNNA CLAY
				GLENDON LIMESTONE
				MINT SPRING FORMATION
				FOREST HILL FORMATION
		EOCENE	JACKSON	YAZOO CLAY
				MOODYS BRANCH
			CLAIBORNE	COCKFIELD FORMATION

Figure 2-2. Generalized Section of Exposed Strata in the Study Area.

glaucinitic sand. It is green to gray-green in fresh exposures and weathers to a yellowish color. It contains partly indurated layers of soft, sandy, clayey limestone in some exposures (Moore 1965).

The Moodys Branch is generally 10 to 15 feet thick in Madison and Hinds County. Its thickness varies on and around the Jackson Dome. Within Hinds County, the Moodys Branch attains a maximum thickness of 45 feet. The Moodys Branch is extremely rich in well-preserved, marine invertebrates and vertebrate fossils. Geologists and paleontologists have collected from the Moodys Branch for over 100 years in the study area. Both the type locality and the alternate type locality of the Moodys Branch is found within the boundaries of the study area (in Jackson, Hinds County).

2.3.3 Yazoo Clay

The Yazoo Clay belongs to the Jackson Group (Eocene) and represents the uppermost Eocene formation in the study area. The Yazoo Clay is exposed in Madison County, Rankin County and Hinds County. The Yazoo Clay is a fairly homogenous unit consisting of blue-green to blue-gray, calcareous, fossiliferous clay with some pyrite. The upper few feet of the Yazoo is non-calcareous and slightly silty. The Yazoo is very limey and glauconitic just above the contact with the subjacent Moodys Branch Formation. Beds of soft, white, argillaceous limestone are present in some localities.

The Yazoo Clay weathers to a yellowish or greenish-yellow color. The weathered clay frequently is stained by limonite and manganese along joints (Ibid). Calcareous nodules are quite commonly found in outcrops of weathered Yazoo. Selenite crystals are common at the outcrop and are found at depths up to 30 or 40 feet in the Yazoo Clay. The Yazoo attains thicknesses up to 525 feet in Hinds County.

2.3.4 Forest Hill Formation

The Forest Hill Formation represents the oldest Oligocene sediments in the study area. The formation is placed in the Vicksburg Group and is exposed in Madison County, Rankin County and Hinds County.

The Forest Hill is made up of very fine to fine-grained, silty, micaceous sands and silty, carbonaceous clay. There are several thin lignite beds in the Forest Hill. The Forest Hill is thinly bedded and presents a laminated appearance on the outcrop. In its unweathered state, the Forest Hill sands are grey to bluish-gray and the clays are gray to gray-brown. When weathered, the sands and clays may be gray, yellow, pink and buff. Thin limonite partings are common in the Forest Hill Formation (Ibid).

2.3.5 Mint Spring Formation

Another Oligocene formation exposed in the study area is the Mint Spring Formation. The Mint Spring is exposed in Rankin and Hinds Counties. The Mint Spring consists of gray-green, fine to coarse-grained, glauconitic, fossiliferous sand and gray-green, glauconitic, fossiliferous sandy marl. The formation may be clayey in part. Pyrite and black phosphatic fossil materials are abundant in the Mint Spring (Ibid).

The lower limit of the Mint Spring is placed at the first occurrence of carbonaceous clays or fine-grained, carbonaceous, micaceous sands of the Forest Hill. The upper limit is the lowest indurated limestone bed of the Glendon. The thickness of the Mint Spring in the study area varies from five feet to over 30 feet (Baughman 1971).

2.3.6 Glendon Limestone

The Glendon Limestone is exposed in Rankin and Hinds Counties. The Glendon consists of alternating beds of gray, fossiliferous, glauconitic, slightly sandy limestone and gray-green, glauconitic, fossiliferous, sandy marl (Ibid). The Glendon weathers to a yellowish or buff color.

The limestone beds in the Glendon may vary in number, thickness, and stratigraphic position from place to place. A hard bed about 10 feet from the top of the Glendon is the most consistent and usually the thickest. The Glendon may weather to a dark brown residual clay (Moore 1965).

2.3.7 Bucatunna Clay

The Bucatunna Clay, like the underlying Glendon Limestone, is found in Rankin and Hinds Counties. The Bucatunna Clay is Oligocene in age and placed in the Vicksburg Group. The Bucatunna consists of dark gray to black, finely carbonaceous, sparsely pyritiferous clay with thin silt-laminae (Baughman 1971). The clay contains thin beds of very fine to fine-grained glauconitic sand in some localities. Gray-green, clayey marls are present in the Bucatunna in some places. The Bucatunna weathers to a chocolate brown color with limonite staining on fractures. Thin limonite flakes and sparse gypsum crystals may be found on the outcrop.

2.3.8 Catahoula

The oldest Miocene deposits exposed in the study area belong to the Catahoula Formation. The Catahoula consists of gray to white, very fine to coarse-grained sands, locally indurated in varying degrees to form sandstones; gray, tan and white silts and siltstones; gray, green, buff and purple, very silty clays and clayey silts and some gray to

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buff, slightly silty clay. The sands contain much kaolinitic, interstitial material accounting for the white color. Some of the sandstones, particularly the fine-grained ones and siltstones are extremely indurated on the surface or very near the surface (Moore 1965).

2.3.9 Hattiesburg

Another Miocene formation exposed in the study area is the Hattiesburg Formation, which consists mainly of silty clays with minor amounts of sand. In the weathered surface exposures, the clays are predominantly tan to moderate reddish-brown in color. Dark gray to greenish-gray clays are also present. At some exposures, ferruginous concretions are abundant. The concretions appear as bright to dark red, rounded or spherical clay balls (Bicker 1969).

2.3.10 Citronelle Formation

The Citronelle Formation is exposed in Rankin, Hinds, Copiah, Simpson, Lawrence, Marion, Pearl River and Hancock Counties in the study area. The Citronelle is Pliocene in age. The term Citronelle has been applied to most of the graveliferous deposits in Mississippi (Moore 1965). The formation is predominantly sandy with local lenses or layers of clay and gravel. Where present, the gravels are usually concentrated near the base of the formation and decrease generally upward through the section. In some places, the formation consists almost entirely of gravel. The colors of the Citronelle deposits are usually various shades of red and orange.

The gravel of the Citronelle is generally composed of chert with smaller percentages of quartz. The pebbles exhibit varying degrees of roundness from sub-angular to well-rounded. The pebble material is a poorly sorted aggregate that ranges from granule size to cobble size with frequent occurrences of material that is of boulder size (Ibid). The gravel of the Citronelle would have been ideal for aboriginal utilization. In addition to being widespread, the deposits of the Citronelle contain abundant chert material suitable for lithic tool manufacture.

2.3.11 Bentley, Montgomery and Prairie (Pleistocene terrace deposits)

Pleistocene terrace deposits are found in Madison, Rankin, Hinds, Copiah, Lawrence, Marion, Pearl River and Hancock Counties. These terrace deposits are also found in Washington and St. Tammany Parishes in Louisiana. The Pleistocene terrace deposits may overlie almost any geologic units. The deposits are made up of gravel, fine to coarse-grained sand and occasional clay lenses (Ibid). Most of the gravels are chert with some quartz. The sands are stained red on the surface and the clays are red, yellow, pink, buff and purple in color. The

higher level deposits usually are more graveliferous and the lower deposits are predominantly sand. The Pleistocene gravels could have provided lithic material suitable for utilization.

2.3.12 Alluvium

Recent or Holocene alluvium is found throughout the study area. Alluvium is especially widespread in the alluvial plains of rivers, creeks, and smaller streams. The alluvium is generally stratified with gravel at the base, then sand, sand and silt, and in some places, clay. The alluvium may also contain abundant organic material. The alluvial deposits are laid down in an essentially horizontal plane. Holocene gravels could have provided sources of raw materials for later aboriginal populations.

2.4 Structure

The Pearl River Basin is located in the central Gulf Coastal Plain. The study area is found along the east flank of the Mississippi Embayment portion of the Gulf Coastal Geosyncline. The axis of the Mississippi Embayment lies to the west of the study area (Figure 2-3). One of the most prominent structural features in the study area is the Jackson Uplift or Jackson Dome (Ibid).

The Jackson Uplift affects the geology and the physiography in parts of the Pearl River Basin. The uplift of the Jackson Dome causes many square miles of Hinds County to fall in the outcrop area of the Moodys Branch and the Yazoo Clay. The Jackson Uplift has been breached by the Pearl River which flows over some of the highest structural points on the Dome (Moore 1965). The structurally high portions on the Dome on the Hinds County side of the Pearl River are in the outcrop area of the Yazoo Clay, and to a lesser extent, the Moodys Branch and the Cockfield.

Other prominent structural features associated with the Pearl River Basin included the Wiggins Anticline, the East Mississippi Syncline, the Southwest Mississippi Uplift and the Hancock Ridge (Figure 2-3). The Pearl River breaches the Wiggins Anticline, while the other uplifts and synclines are found on the margin of the Pearl River Basin. Important fault zones include the Pickens-Pollard fault zone to the northeast of the study area, the Arkansas River fault zone to the north of Jackson, the Ouachita River fault zone in the central portion of the study area and the Lake Borgne fault zone to the south (Fisk 1944).

The Mississippi Salt Basin is found in the northern portion of the study area and numerous salt domes are present in the subsurface. However, topographic expressions of the uplifted domes are difficult to detect (Moore 1965). Many of the domes are covered by alluvium, loess or other sediments and are indistinguishable on the surface.

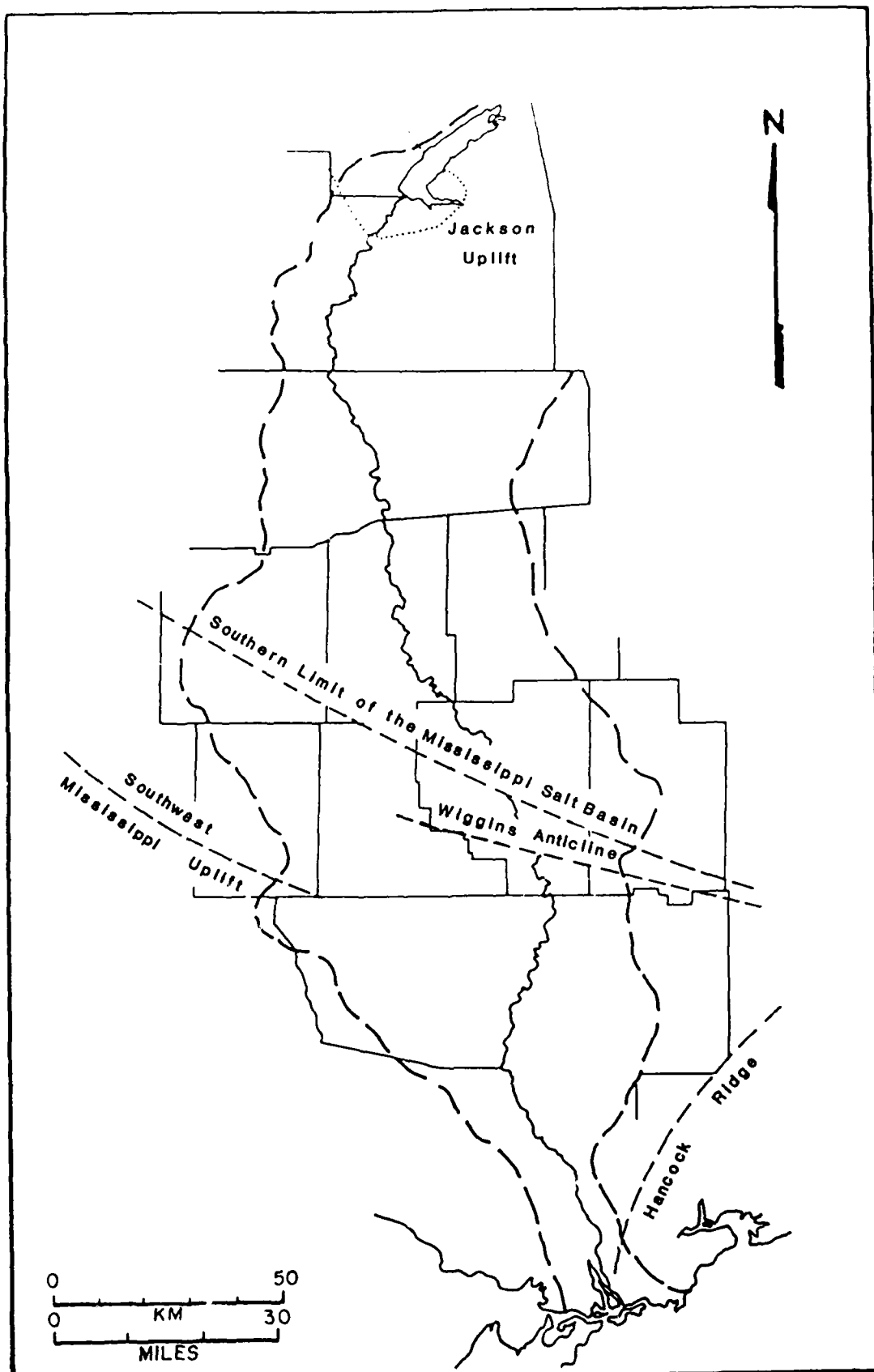


Figure 2-3. Structural Features of Study Area.
2-13

2.5 Stratigraphy

Descriptions of the various formations exposed throughout the study area are given in the General Geology section of this report. This section presents the detailed stratigraphy of the exposed formations in the counties and parishes of the study area.

2.5.1 Madison County

The oldest exposures in the study area are found in Madison County in the form of the Eocene Cockfield Formation. The Cockfield is exposed in the north-central portion of the county. Small exposures of the Eocene Moodys Branch Formation are found in southeastern Madison County near the Ross Barnett Reservoir and east of Canton near the Ross Barnett Reservoir. The majority of the county consists of Eocene Yazoo Clay. The southwestern portion of the county is characterized by the Oligocene Forest Hill. Very minor Pleistocene terrace deposits may be found on small tributaries and along the margin of the Ross Barnett Reservoir in Madison County (Priddy 1960).

2.5.2 Rankin County

The Eocene Yazoo Clay is the oldest exposure in Rankin County within the study area. The Yazoo Clay characterizes the northern part of Rankin County. All exposures of the Yazoo Clay are north of the Pelahatchie Creek except for approximately two miles of exposures south of the creek and a thin band (approximately two miles wide) found along the floodplain of the Pearl River (Baughman 1971).

A narrow band of Oligocene Forest Hill Formation is located south of Pelahatchie Creek and north of Richland Creek. The band is about two to three miles wide. A very small exposure of Forest Hill Formation is located just south of Richland Creek near the floodplain of the Pearl River. The central portion of Rankin County is characterized by the Oligocene Vicksburg Group (Mint Spring, Glendon Limestone, Byram and Bucatunna Clay). The southern portion is characterized by the Miocene Catahoula Formation.

Small exposures of Pliocene Citronelle Formation are located in the south-central portion of Rankin County. Scattered exposures of Quaternary pre-loess terrace deposits are found along Dobbs Creek, Campbells Creek, Strong River and Steen Creek in the southern portion of the county. These deposits are found as remnants on hills and along streams (Ibid). The floodplains of the Pearl River, Pelahatchie Creek, Richland Creek and other creeks are characterized by Recent alluvium (Ibid).

2.5.3 Hinds County

The portion of Hinds County in the study area is characterized mainly by the Yazoo Clay in the northern half. The Cockfield Formation

and the Moodys Branch Formation are exposed near Jackson, Mississippi. These exposures are approximately four miles long and two miles wide. This is the only exposure of the Cockfield and Moodys Branch in Hinds County. However, the type locality and alternate type of the Moodys Branch Formation are located in these exposures (Moore 1965).

A narrow band of Oligocene strata is exposed in the central portion of Hinds County. The strata consist of the Forest Hill Formation, Mint Spring Formation, Glendon Limestone, and Bucatunna Clay. The southern portion of Hinds County is characterized almost entirely by the Catahoula Formation (Miocene). A few small scattered exposures of the Pliocene Citronelle Formation and pre-loess terrace deposits are found across the southern portion of Hinds County in the Pearl River Basin.

2.5.4 Copiah County

The oldest exposed sediments in Copiah County are Tertiary sediments belonging to the Miocene Catahoula Formation. The Catahoula Formation is characteristic of the entire county except for the extreme southern part. The Miocene Hattiesburg Formation is not as widespread as the Catahoula Formation and is found in the southern portion of the county.

The most widespread formation in Copiah County is the Citronelle Formation. The northeastern and southwestern portions of the county consists mainly of Citronelle. Pleistocene pre-loess terrace deposits characterize the northwestern portion of the county. Other exposures of pre-loess terrace deposits are found adjacent to the floodplains of major rivers and streams. The floodplains of the major rivers and creeks, such as the Pearl River, Copiah Creek, Brushy Creek, White Oak Creek, Bayou Pierre and Foster Creek, are characterized by Recent alluvium. The floodplain of the Pearl River ranges from less than one-half to four miles (Bicker 1969).

2.5.5 Simpson County

Tertiary sediments belonging to the Miocene Catahoula Formation represent the oldest sediments in Simpson County. The majority of the northern half of Simpson County is characterized by the Catahoula Formation. Exposures of the Catahoula Formation are also found in other parts of Simpson County. The Miocene Hattiesburg Formation is also found in Simpson County. The Hattiesburg Formation is exposed in a narrow band south of the Strong River and along the eastern boundary of the county.

The southern part of Simpson County is covered mainly with the Pliocene Citronelle Formation. Scattered exposures of the Citronelle are also found in the northern portion of the county. Recent alluvium characterizes the floodplain of the Strong River which extends across Simpson County (American Association of Petroleum Geologists 1975 [A.A.P.G.]).

2.5.6 Lawrence County

The oldest sediments exposed in Lawrence County are Miocene in age. Most of the Miocene sediments in Lawrence County belong to the Hattiesburg Formation. The Hattiesburg Formation is exposed mainly in the northwestern and eastern portion of the county.

The Pliocene Citronelle Formation makes up almost the entire southwest section of the county. Small exposures of the Citronelle are also found in the extreme northeastern and central section of Lawrence County. Very small exposures of Pleistocene terrace deposits are found in the northwest section. The floodplain of the Pearl River in Lawrence County consists of Recent alluvium. The floodplain averages five to six miles in width.

2.5.7 Marion County

The oldest exposed sediments in Marion County are Miocene in age and belong mainly to the Hattiesburg Formation. A narrow band of Miocene sediments is found along the west bank of the Pearl River in Marion County. Most of the eastern part of the county is also Miocene.

The majority of the western part of the county is Pliocene Citronelle Formation. The northeastern portion of Marion County is also Pliocene Citronelle Formation. In the extreme southern part of the county, there are some very small exposures of Pleistocene Montgomery terrace deposits. Recent alluvium characterizes the floodplain of the Pearl River in Marion County. The floodplain is approximately five miles wide (Ibid).

2.5.8 Washington Parish, Louisiana and Pearl River County, Mississippi

The exposed strata in Washington Parish and Pearl River County are similar to those in Marion County. Oldest exposed sediments belong to the Hattiesburg Formation. Pleistocene deposits are more widespread and diverse in Washington Parish and Pearl River County. In addition to the Pliocene Citronelle Formation, three Pleistocene terrace deposits are exposed. Bentley, Montgomery and Prairie terrace deposits are widespread in Washington Parish and Pearl River County. Alluvium of Recent origin characterizes the floodplain of the Pearl River. The Citronelle, the terrace deposits and alluvium provide excellent sources of chert and quartz for possible aboriginal use (A.A.P.G. 1975).

2.5.9 St. Tammany Parish, Louisiana and Hancock County, Mississippi

The sediments of Hancock County are essentially the same as those in Washington Parish and Pearl River County. Miocene sediments, Pliocene sediments (Citronelle Formation), Pleistocene sediments (Bentley, Montgomery, and Prairie) and Recent alluvium characterize Hancock County.

St. Tammany Parish is predominantly Pleistocene Prairie terrace deposits. Lesser amounts of Pleistocene Montgomery terrace deposits and Recent alluvium are also found in St. Tammany Parish. Gravels from these formations could have been utilized by aboriginal inhabitants (Ibid).

2.6 Soils

The types of soils present in an area directly influence the types and amounts of vegetation that can exist. Forest types are, in a large part, controlled by the types of soils. The amount of water present in an area is also determined by soil types. The types of soils also indirectly affect the kinds of wildlife that can survive in an area. Soil properties that affect wildlife habitats include the thickness of soils, surface texture, available water capacity, rockiness, hazard of flooding, slope and permeability. The direct and indirect effects of soil types, such as wildlife, vegetation and water, affected the aboriginal populations in the Pearl River Basin.

In this report, soil types will be described for each county or parish for a one-mile area on each side of the Pearl River. Soil surveys were utilized when available and general soil maps were used where soil surveys had not been completed.

2.6.1 Madison County

Soils along the Pearl River and Ross Barnett Reservoir in Madison County consist of silty and loamy soils on uplands and terraces and silty soils on nearly level areas subject to flooding. Soils subject to flooding include the Gillsburg-Ariel-Rosebloom association. This association consists of somewhat poorly, poorly, and well drained soil. The Gillsburg-Ariel-Rosebloom soils formed in silty material on floodplains of the Pearl River (United States Department of Agriculture-Soil Conservation Service 1972b[U.S.D.A.-S.C.S.]).

The remainder of the soil types along the Pearl River in Madison County consist of silty and loamy soils on surrounding terraces and uplands. Three soil associations are recognized: the Calloway-Henry-Grenada association, the Loring-Providence association and the Providence-Smithdale-Loring association.

The Calloway-Henry-Grenada association is characterized by somewhat poorly, poorly and moderately well drained, nearly level to gently sloping, silty soils. The Calloway-Henry-Grenada association soils have a fragipan. The Loring-Providence association is characterized by moderately well drained, gently sloping to sloping, silty soils. The Loring-Providence silty soils have a fragipan that is underlain by clayey lower subsoils. The soils of the Providence-Smithdale-Loring association are moderately well drained, gently sloping to sloping, and silty. The Providence-Smithdale-Loring association soils are underlain by a fragipan. Well-drained, steeply sloping, loamy soils are also found in the Providence-Smithdale-Loring association (Ibid).

2.6.2 Rankin County

Soils in Rankin County along the Pearl River and Ross Barnett Reservoir are similar to the soils in Madison County, but there are some differences. As in Madison County, the floodplain of the Pearl River is characterized by the Gillsburg-Ariel-Rosebloom association. This association consists of a somewhat poorly, poorly and well-drained silty soil. However, the floodplain of the Pearl River is also characterized by the Jena-Velda-Rosebloom association. The Jena-Velda-Rosebloom association has well drained, loamy and silty soils and poorly drained silty soils (U.S.D.A.-S.C.S. 1972c).

Two other associations are found in the uplands and terraces surrounding the Pearl River in Rankin County. These are the Kipling-Savannah-Pheba association and the Providence-Bude association. The Kipling-Savannah-Pheba association has nearly level to sloping, somewhat poorly drained soils that have a clayey subsoil and moderately well and somewhat poorly drained loamy soils. The soils of the Kipling-Savannah-Pheba association have a fragipan. The soils of the Providence-Bude association are moderately well and somewhat poorly drained, gently sloping to sloping and silty. Soils of the Providence-Bude association have a fragipan (Ibid).

2.6.3 Hinds County

Four soil associations are recognized along the Pearl River in Hinds County (U.S.D.A.-S.C.S. 1979). Two associations, the Cascilla-Bonn-Deerford and the Reidtoun-Oaklimeter-McRaven, characterize the Pearl River floodplain and its tributaries. The Loring-Siwell-Urbanland and the Loring-Providence-Grenada association characterize the uplands surrounding the Pearl River.

The Cascilla-Bonn-Deerford association is the main soil type along the Pearl River in Hinds County. The Cascilla-Bonn-Deerford association consists of nearly level, well drained silty soils and poorly drained and somewhat poorly drained silty soils. These soils have a high content of sodium and are found on floodplains. The Reidtoun-Oaklimeter-McRaven association characterizes many of the tributaries of the Pearl River in Hinds County. Soils of this association are found along Hardy Creek, Rhodes Creek, Vaughn Creek, Big Creek and White Oak Creek. The floodplain soils of the Reidtoun-Oaklimeter-McRaven consist of nearly level, moderately well drained and somewhat poorly drained silty soils (Ibid).

In the uplands around the Pearl River in Hinds County, two soil types, the Loring-Siwell-Urbanland and the Loring-Providence-Grenada, are found. Soils of the Loring-Siwell-Urbanland complex are gently sloping to moderately steep, very strongly acid to medium acid, brown, silty and loamy. Loring-Siwell soils have a compact and brittle silt loam fragipan that restricts the rooting depth of plants and limits the amount of water available to plants. The urbanland is mostly reworked

or altered soil material that has no identifiable soil profile. Urbanland is used mainly for homesites, streets, parking lots and business establishments (Ibid).

The uplands in the southern part of Hinds County along the Pearl River consist of soils of the Loring-Providence-Grenada association. The soils of this association are moderately well drained and medium acid to very strongly acid. The solum (A and B horizons) is usually 45 to 70 inches in thickness. The fragipan is usually found at a depth from 18 to 35 inches and consists of a silt/loam or silty clay loam (Ibid).

2.6.4 Covich County

Soil types in Covich County along the Pearl River consist of the Jena-Kirkville-Alaga association, the Rosella-Cahaba-Brewton association, the Gillsburg-Ariel-Peoria association and the Loring-Providence-Grenada association. The Jena-Kirkville-Alaga association and the Rosella-Cahaba-Brewton association are both associated with the floodplain and terraces of the Pearl River. The Jena-Kirkville-Alaga association, which characterizes the floodplain of the Pearl in Covich County, consists of nearly level, well drained and moderately well drained, loamy soils and excessively drained, sandy soils. The Rosella-Cahaba-Brewton association, which characterizes the terraces on the Pearl in Covich County, consists of nearly level, poorly drained silty soils and well drained and somewhat poorly drained, loamy soils (U.S.D.A.-S.C.S 1972a).

Covich Creek and Pegies Creek, major tributaries of the Pearl River in Covich County, are characterized by soil types belonging to the Gillsburg-Ariel-Peoria association. The Gillsburg-Ariel-Peoria association consists of somewhat poorly drained, well drained and poorly drained, acid, nearly level soils. These soils have a silty subsoil and are found on floodplains of streams and rivers.

The uplands surrounding the Pearl River in Covich County have soil types similar to the soil types in the southern part of Hinds County along the Pearl River. These soils consist of the Loring-Providence-Grenada association. The soils of this association are moderately well drained and medium acid to very strongly acid. The solum (A and B horizons) is usually 45 to 70 inches in thickness. The fragipan is usually found at a depth from 18 to 35 inches and consists of a silt loam or silty clay loam (U.S.D.A.-S.C.S. 1979).

2.6.5 Simpson County

In Simpson County, four soil types are found along the Pearl River. Two of the associations, the Jena-Velda-Rosebloom and the Mantachie-Bibb-Gillsburg, are subject to flooding. The Jena-Velda-Rosebloom association, which characterizes the soils on the floodplain of the Pearl River, consists of well drained, loamy soils and well-drained and

poorly drained, silty soils on floodplains. The Mantachie-Bibb-Gillsburg association also characterizes the Pearl River floodplain in Simpson County. The Mantachie-Bibb-Gillsburg association consists of somewhat poorly drained, loamy and silty soils and poorly drained loamy soils.

Soils of the Ora-Aden association characterize the terraces around the Pearl River in Simpson County. The soils of the Ora-Aden association are moderately well drained, nearly level to gently sloping, loamy and silty soils. These soils have a fragipan.

The uplands surrounding the Pearl River in Simpson County are dominated by soils of the Providence-Smithdale association. These soils are nearly level to sloping, silty soils with fragipans and well drained sloping to steeply sloping, loamy soils (U.S.D.A.-S.C.S. 1971d).

2.6.6 Lawrence County

Soil types along the Pearl River in Lawrence County consist of the Jena-Rosebloom-Velda association, the Guyton-Cahaba-Rosella association, the Cadeville-Falkner-Freestone association, and the Smithdale-Lucy association.

The floodplain of the Pearl River in Lawrence County has soils belonging to the Jena-Rosebloom-Velda association. Jena soils consist of a dark-brown, fine sandy loam surface layer and a yellowish-brown, fine sandy loam subsurface layer. Jena soils are very strongly acid or strongly acid and flooding occurs twice each year. The Rosebloom series consists of poorly drained soils that formed in loamy alluvial sediment that contains a large amount of silt. The surface layer is a grayish-brown silt loam which is underlain by a gray silty clay loam that has brownish mottles. The Velda series consists of well-drained soils that formed in loamy alluvium that contains a large amount of silt. The surface layer is a dark yellowish-brown silt loam which is underlain by a dark yellowish-brown silt loam and a yellowish-brown silt loam that has brownish mottles (U.S.D.A.-S.C.S. 1978).

The uplands in the northern part of Lawrence County along the Pearl River are characterized by the Guyton-Cahaba-Rosella association and the Cadeville-Falkner-Freestone association. The Guyton-Cahaba-Rosella association consists of poorly drained and well drained, nearly level, loamy soils that have a high content of silt in some places. The soils are found mainly on stream terraces and uplands. The Cadeville-Falkner-Freestone association consists of moderately well drained and somewhat poorly drained, moderately sloping to steep, loamy soils that have a clayey to loamy subsoil (Ibid).

The uplands in the southern part of Lawrence County along the Pearl River are also characterized by the Guyton-Cahaba-Rosella association. However, the southern uplands are also characterized by the Smithdale-Lucy association. The Smithdale series consists of well-drained soils that formed in loamy marine sediment. The surface layer is a dark

grayish-brown sandy loam about five inches thick. The surface layer is underlain by a yellowish-red, sandy, clay loam. The Lucy series consists of well drained soils that formed in sandy and loamy material. The surface layer of the Lucy series is a brown, loamy sand. The subsurface layer is a light yellowish-brown loamy sand (Ibid).

2.6.7 Jefferson Davis County

Only a very small portion of Jefferson Davis County is found within one mile of the Pearl River. This portion of Jefferson Davis County is located in the extreme southwestern part of the county near Greens Creek. Kirkville-Mantachie and Ruston-Bassfield soils characterize the area. The Kirkville series consists of moderately well drained soils that formed in loamy materials on floodplains. The surface layer is a dark-brown silt loam mottled with light yellowish silt loam. The Mantachie series consists of somewhat poorly drained soils that formed in loamy material on floodplains. The surface layer is a dark-brown silt loam. The Ruston series consists of well-drained soils that formed in loamy material on uplands and low stream terraces. The surface layer is mottled dark grayish-brown and brown sandy loam (U.S.D.A.-S.C.S. 1976).

2.6.8 Marion County

The major soil type found along the Pearl River in Marion County is the Jena-Velda-Rosebloom association. This association characterizes the majority of the Pearl River floodplain in Marion County just as it does in Lawrence County. This association is described previously for Lawrence County.

Two other associations characterize the soils found in the floodplain and terrace of the Pearl River in Marion County. These are the Kinston-Mantachie-Kirkville association and the Cahaba-Guyton-Rosella association. The Kinston-Mantachie-Kirkville association consists of poorly drained, somewhat poorly drained and moderately well drained, loamy soils. These soils are found on floodplains. The Cahaba-Guyton-Rosella association consists of poorly drained and well drained, nearly level, loamy soils that have a high content of silt in some places. The soils are found mainly on stream terraces and uplands (U.S.D.A.-S.C.S. 1971b).

The uplands surrounding the Pearl River in Marion County are characterized by the Lakeland-Cahaba-Stough association. These soils consist of nearly level and gently sloping, excessively drained, sandy soils and well and somewhat poorly drained loamy soils (Ibid).

2.6.9 Pearl River County

The vast majority of the area around the Pearl River in Pearl River County is composed of the Jena-Rosebloom-Velda association. Jena soils

consist of a dark-brown, fine sandy loam surface layer and a yellowish-brown, fine sandy loam subsurface layer. The Rosebloom series consists of poorly drained soils that formed in loamy alluvial sediment that contains a large amount of silt. The surface layer is a grayish-brown silt loam which is underlain by a gray, silty clay loam that has brownish mottles. The Velda series consists of well-drained soils that formed in loamy alluvium that contains a large amount of silt. The surface layer is a dark yellowish-brown, silt loam which is underlain by a dark yellowish-brown silt loam and a yellowish-brown silt loam that has brownish mottles (U.S.D.A.-S.C.S. 1971c).

Three soil associations characterize the uplands surrounding the Pearl River in Pearl River County. The Susquehanna-Savannah-Ruston association consists of somewhat poorly drained, gently to strongly sloping soils that have a clayey subsoil; moderately well to well drained, gently sloping to strongly sloping, loamy soils that have a fragipan and well drained, gently to steeply sloping, loamy soils. The Smithton-Pheba-Smithdale association consists of poorly, somewhat poorly well drained, nearly level to gently sloping loamy soil. The Harleston-Atmore-Basin association consists of moderately well, poorly, and somewhat poorly drained, nearly level, loamy soils (Ibid).

2.6.10 Washington Parish, Louisiana

Almost the entire area surrounding the Pearl River in Washington Parish, Louisiana is characterized by the Bibb-Mantachie association. The Bibb-Mantachie association consists of level to nearly level, acid, floodplain soils that are subject to frequent flooding. The soils are used for woodland. The poorly drained Bibb soils on level slopes make up about 40 percent of the association. They have a gray fine sandy loam surface and subsoil. The somewhat poorly drained Mantachie soils on nearly level slopes make up about 40 percent of the association. The Mantachie soils have a grayish-brown loam surface and gray loam subsoil (U.S.D.A-S.C.S. 1971e).

A small part of southern Washington Parish along the Pearl River is characterized by the Myatt-Stough-Cahaba association. This association is characterized by acid, loamy soils on broad flats and depressed areas. The poorly drained Myatt soils make up about 55 percent of the association. The Myatt has gray fine sandy loam surface and a gray sandy clay loam subsoil. The somewhat poorly drained Stough soils have a pale brown surface and a yellowish-brown and a gray loam subsoil. The well drained Cahaba soils make up 12 percent of the association. The Cahaba soils have a brown, fine sandy loam surface and a yellowish-red sandy clay loam subsoil (Ibid).

2.6.11 St. Tammany Parish, Louisiana

The area along the Pearl River in St. Tammany Parish, Louisiana is very similar to the soils in Washington Parish. The vast majority of the soils belong to the Bibb-Mantachie association. The Bibb-Mantachie

association consists of level to nearly level, acid, floodplain soils that are subject to frequent flooding. The soils are used for woodland.

A small part of the soils along the Pearl River in St. Tammany Parish belong to the Marsh association. It consists of slightly saline to freshwater marshland. There is a dense growth of marsh plants, and most of the acreage is used for wildlife habitat. The watertable is at or above the surface most of the time. The slightly saline marsh is frequently flooded by slightly saline tide waters. About 60 percent of the marsh area consists of soft, thick organic material in various stages of decomposition. Freshwater marsh, which is frequently flooded by freshwater, makes up about 40 percent of the association. The freshwater marsh consists of firm organic matter which is several feet thick and is underlain by an acid silty clay (U.S.D.A.-S.C.S. 1969).

2.6.12 Hancock County

Three soil associations characterize the area around the Pearl River in Hancock County, Mississippi. These are the Jena-Velda-Rosebloom association, the Harleston-Lenoir-Atmore association and the Handsboro-Tidal Marsh association. As in Pearl River County just to the north, the floodplain is characterized by the Jena-Velda-Rosebloom association. The Jena-Velda-Rosebloom association consists of nearly level to gently sloping, well drained, loamy and silty soils and poorly drained silty soils. The terraces surrounding the Pearl River are characterized by the Harleston-Lenoir-Atmore association. The Harleston-Lenoir-Atmore association consists of nearly level to gently sloping, moderately well drained, loamy soils, somewhat poorly drained soils that have a clayey subsoil and poorly drained loamy soils (U.S.D.A.-S.C.S. 1971a).

The southern-most part of the Pearl River in Hancock County is characterized by soils of the marsh (the Handsboro-Tidal Marsh association). The Handsboro-Tidal Marsh association consists of very poorly drained, organic and sandy soils flooded by tides (Ibid).

2.7 Flora and Fauna

The flora and fauna of the Pearl River Basin is related to a variety of factors including the vegetational type, climate, physiography, and soil (Dice 1943). No major changes in the climate are believed to have occurred during the last several thousand years. An environment very similar to present conditions has apparently existed for the last 5000 years (Burden et al 1978).

The present flora and fauna of the study area may give insight to the utilization of past flora and fauna by aborigines. Although changes in the flora and fauna have occurred, these changes were not significant enough to alter the animals and plants available for aboriginal use in the last 1000 years. Many of the present species, both floral and faunal, were probably utilized by aboriginal inhabitants.

The exploitive potential of the Pearl River Basin could have easily provided the indigenous populations with an abundant source of faunal and floral food products. Floral and faunal resources were available throughout the year, although seasonality created diversity in the amount and species represented (Thorne 1977). The Pearl River provided an abundant source for fish, shellfish and smaller aquatic invertebrates and vertebrates.

The flora and fauna of the Pearl River Basin belong to the Austroriparian biotic province (Blair 1950). This large, diverse biotic province extends from southeastern Texas to the Atlantic Ocean. The province basically includes the Gulf Coastal Plain. The floral and faunal communities found in the Pearl River show a definite relationship to the geological and physiographic features.

2.7.1 Flora

The flora of the Pearl River Basin has been classified as Temperate Deciduous Forest (Oak-Deer-Maple Biome) by Shelford (1963). The temperate deciduous forest is a very large biome occupying a large portion of North America. This biome extends from the center of the Great Lakes region south to the Gulf of Mexico. The chief characteristic of the temperate deciduous forest is the predominance of trees with broad leaves which are shed each autumn. An understory of small trees and shrubs is usually also deciduous. The forest floor is covered with a dense layer of leaves in various stages of decay. The southern part of the forest also contains evergreen species.

Three large subdivisions of the deciduous forest are recognized by Shelford (Ibid). The Pearl River Basin is located in the southern and lowland forest of the temperate deciduous forest. The southern and lowland region of Shelford (Ibid) is subdivided into the oak-hickory region and the magnolia-maritime region. The Pearl River Basin is located in both of these regions.

The oak-hickory region occupies a strip along the eastern edge of the oak-chestnut forest from New Jersey to Alabama, then westward across the Mississippi River into Arkansas and Texas and northward to central Illinois. The magnolia forest extends from South Carolina to near Houston and covers the northern two-thirds of Florida.

General characteristics of the temperate deciduous forest in the Pearl River Basin include tree species such as white oak (Quercus alba), blackoak (Quercus velutina), bitternut hickory (Carya cordiformis), southern red oak (Quercus falcata), laurel oak (Quercus laurifolia), sweetgum (Liquidambar styraciflua), mockernut hickory (Carya tomentosa), redbay (Persea bordonia) and American Holly (Ilex krugiana). Also widely distributed in this area is a group of trees which include willows, cottonwoods, chokeberry, American elm (Ulmus americana), basswood (Tilia americana) and swamp chestnut oak (Quercus michauxii). There are about 50 deciduous shrubs and understory trees that are important in the forest along with about 15 evergreen shrubs and a dozen

vines (Ibid). There are about twice as many herbs as shrubs and vines. These subordinate species support a rich fauna of insects and spiders. The understory trees include sassafras (Sassafras albidum), eastern redbud (Cercis canadensis), flowering dogwood (Cornus florida) and American hornbeam (Carpinus caroliniana). Important shrubs are pawpaw, spicebush, arrow-wood, black huckleberry, blueberry, witch-hazel and Virginia creeper (Shelford 1963).

Within the temperate deciduous forest in the Pearl River Basin, numerous forest types have been recognized. Forest type is a descriptive term used to group stands of trees that have similar characteristics and development because of certain ecological factors (U.S.D.A.-S.C.S. 1979). In the northern portion of the study area, the Hinds and Rankin County area, four forest types are recognized. These forest types include: the oak-hickory, which is the most predominant, the loblolly-shortleaf pine, oak-gum-cypress and the oak-pine. Forest types in the Lawrence and Marion County area include: loblolly pine-shortleaf pine, which is the most predominant in this area, oak-gum-cypress, oak-pine, oak-hickory and longleaf pine-slash pine (U.S.D.A.-S.C.S. 1978).

Within the temperate deciduous forest, wetland areas are characterized by bald cypress (Taxodium distichum), tupelo gum (Nyssa aquatica), black willow (Salix nigra) and buttonbush (Cephalanthus occidentalis). Associated species within the wetland areas include bitter pecan (Carya aquatica), green ash (Fraxinum pennsylvanica), pumpkin ash (Fraxinus tomentosa), drummond red maple (Acer drummondii), nuttall oak (Quercus nuttalli), cottonwood (Populus deltoides), overcup oak (Quercus lyrata), hackberry (Celtis laevigata) and water locust (Gleditsia aquatica).

The magnolia forest region of the temperate deciduous forest also includes the coastal areas of the Pearl River Basin. These coastal areas contain marshes and wetlands. Trees within the wetlands have already been described in this section. The type of grasses present in the marshes and wetlands is dependent upon the salinity of the water. Wire grass, coco, three-cornered grass, yellow cut grass, bull tongue, pickerel weed and wild mullet characterize the vegetation in the brackish marshes. The fresh marshes are characterized by lakegrass, bull grass and sawgrass (Beavers 1978). Few of the marsh plants are significant food resources for aborigines. A few exceptions known are the root of the bull tongue and the seeds of water lilies which were eaten by the Chitimacha Indians to the east of the alignment area (Burden, et al 1978). Most of the vegetation associated with the marshlands does not constitute available food source for human exploitation, but the vegetation does provide numerous ecological habitats for the fauna. Also, vegetation of the marshes and wetlands could have been utilized by aborigines for ritual, subsistence and craft activities.

In addition to providing numerous habitats for fauna, the flora of the Pearl River Basin represented an immense food source for aboriginal man and animals. Harvestable staples include nuts, seeds and fruits. General vegetation was also available as a food source.

The nuts of various trees are among the more extensively exploited natural crops available to both aboriginal man and the fauna. Nuts as food stuffs are rich in fats and proteins. Nuts are particularly attractive because of the longterm availability (Martin et al 1961). Among the more important nut-bearing trees that could have been available to aboriginal populations in the Pearl River Basin were the white oaks (Quercus alba), swamp chestnut oaks (Quercus michauxii), southern red oaks (Quercus falcata), laurel oaks (Quercus laurifolia), bitternut hickory (Carya cordiformis), pignut hickory (Carya garbra) and black walnut (Juglans nigra).

The seeds of various trees, shrubs and weeds are more important as a food source to animals than to man. However, Harris (1968) notes that many of the understory plants that occur in the Pearl River Basin are a source of food for both man and animals. Martin et al (1961) notes that seeds make up practically the entire diet of some common species of birds and small mammals. Seeds generally mature in late summer or early fall. However, a portion of the crop may remain available for use later in the season either on the plants or on the ground. Weeds, because of their abundant seeds, are more valuable as wildlife foods than flowers (Thorne 1977). The amount of seed produced by various plants is tremendous. Species of the pigweeds (Amaranthus) are known to bear as many as 100,000 seeds per plant. Many important wildlife foods are derived from various types of weeds such as pigweed (Amaranthus retroflexus), ragweed (Ambrosia artemisiifolia), crabgrass (Digitaria sanguinalis) and species of smartweed (Polygonum).

The vegetative parts of many plants constitute the major part of the diet of many birds and mammals. Martin et al (1961) notes that all aerial parts of grasses and small herbaceous plants are eaten by hoofed browsers. The leaves, stems, tubers and seeds of aquatic plants are consumed by waterfowl, muskrats, beaver and occasionally by deer.

2.7.2 Fauna

The faunal community of the Pearl River Basin includes aquatic, semi-aquatic and terrestrial animals. The following discussion of the fauna includes both the invertebrate and vertebrate components.

2.7.2.1 Invertebrates - A great diversity of invertebrates are present and abundant in the Pearl River Basin. However, only those invertebrates which may have been utilized by aboriginal inhabitants are discussed. Swanton (1946) notes that mollusks (pelecypods and gastropods) and crustaceans were frequently used by Southeastern Indian tribes as a source of food.

There are approximately 18 species of pelecypods and gastropods found in the Pearl River and its tributaries (U. S. Army Corps of Engineers 1975). Freshwater mussels and gastropods have long been recognized as a faunal resource for aboriginal populations (Thorne 1977). However, the importance of mussels to prehistoric subsistence economy

has probably been over-estimated. Previous researchers in the Mississippi region have noted the widespread and extensive use of mussels. However, the evaluation of the mussels' importance to aborigines has largely been uncritical and has been based on quantity alone. Parmalee and Klippel (1974) report that the nutritional value and caloric content of mussels are very low. Therefore, freshwater mussels should be considered a minor food supplement or famine food.

2.7.2.2 Fishes - The Pearl River and its numerous tributaries as well as lakes and ponds represent important locations for the aboriginal use of fish. The Pearl River Basin probably supports around 100 species of fish (U.S. Army Corps of Engineers 1975). Representative families include the Lepisosteidae (gars), Amiidae (bowfins), Anguillidae (eels), Clupeidae (herrings), Esocidae (pickerels), Cyprinidae (minnows), Catostomidae (suckers), Ictaluridae (catfishes), Aphredoderidae (pirate perches), Percichthyidae (temperate basses), Cyprinodontidae (topminnows), Poeciliidae (live bearers), Atherinidae (silversides), Centrarchidae (sunfishes and basses), Ellasmomatodae (pygmy sunfishes), Percidae (perches) and Sciaenidae (drums).

With the diversity and abundance of fishes in the rivers, streams and lakes, aborigines could have easily utilized the fishes. Among the larger species of fish in this area are: several species of gar (Lepisosteus osseus, Lepisosteus oculatus, Lepisosteus platostomus, and Lepisosteus spatula) and several species of catfish (Ictalurus punctatus, Ictalurus furcatus, Ictalurus natalis, Ictalurus nebulosus, Ictalurus melas and Pylodictis olivaris). Other common fish that could have served as a food resource for aboriginal inhabitants include: white bass (Morone chrysops), yellow bass (Morone mississippiensis), white crappie (Promoxis annularis), black crappie (Pomoxis nigromaculatus), green sunfish (Lepomis cyanellus), spotted sunfish (Lepomis punctatus), longear sunfish (Lepomis megalotis), bluegill (Lepomis macrochirus), red ear sunfish (Lepomis microlophus), largemouth bass (Micropterus salmoides), spotted bass (Micropterus punctulatus) and sauger (Stizostedion caradense).

Swanton (1946) described several techniques by which Indians in the southeastern United States caught fish. Some or all of these techniques could have been used by aborigines in the Pearl River Basin. These techniques include hook and line, weirs, nets, traps, dragging, bow and spear and poisoning. These techniques are briefly described below:

- 1) Hook and line, employing bone and live bait (i.e. worms, grasshoppers or crayfish), may have been employed as a bank fishing technique. Families that could have been caught by this technique include the catfishes, sunfishes (bream, bass and crappie) and pickerels.

- 2) Weirs, made of stone and/or reeds, may have been built during flood stages of a stream or river; they would then trap the fishes as the water level dropped. Weirs may also have been built as "corrals"; the Indians would wade in the water and drive the fish into the weir,

where they would be trapped. Fishes most susceptible to the technique include the suckers, sunfishes and catfishes.

3) Nets known to the Indians included two types, active and passive. Active nets were physically moved through the water to entrap sunfishes, suckers and catfishes. Passive nets were maintained in one position by weights or rope. Suckers, gar, catfishes, temperate basses and sunfishes were most likely to be caught in this way.

4) Traps, such as slat traps and mazes, were constructed and set in place so that a fish could enter but not exit. Fishes susceptible to this technique include the catfishes, suckers and sunfishes.

5) Dragging utilized a heavy object, such as a log, that was physically pulled through the water so that it disturbed the bottom layer. Fishes along the bottom swam from the disturbance and were netted. Fishes caught in this way included the suckers and catfishes.

6) Bow and spear fishing required that the fish be seen; this restricted the use of this technique to the catching of top water and shallow water fishes. These include the gars, sunfishes and suckers.

7) Poisoning may have been accomplished either by blocking a stream or by poisoning an isolated hole or sink. Horse chestnut, devil's shoestring and black walnut are some of the natural poisons utilized. As the fish floated to the top, the Indians would gather them by hand or with baskets. Fishes susceptible to this include gars, bowfins, minnows, suckers, herrings, catfishes and sunfishes.

2.7.2.3 Amphibians - There are approximately 30 species of amphibians in the Pearl River Basin (Conant 1958). Families that may occur include Proteidae (mudpuppies), Amphiumidae (amphiumas), Sirenidae (sirens), Ambystomidae (mole salamanders), Salamandridae (newts), Plethodontidae (lungless salamanders), Pelobatidae (spade-foot toads), Bufonidae (toads), Hylidae (tree frogs), Microhylidae (narrow-mouthed toads) and Ranidae (tree frogs). Thorne (1977) reports that frog legs are generally known as a good source of food, and in aboriginal times, salamanders were also eaten. Edible and larger frogs that would have been found in the Pearl River Basin include the bullfrog (Rana catesbeiana), the bronze frog (Rana clamitans) and the leopard frog (Rana pipiens). The leopard frog is the most abundant in this area.

2.7.2.4 Reptiles - Approximately 60 species of reptiles are thought to occur in the Pearl River Basin (Conant 1958). Half of the 60 species are represented by snakes, while the remainder consist of lizards, turtles and alligators. Representative families include the Crocodylidae (alligators), Chelydridae (snapping turtles), Testudonidae (box and water turtles), Trionychidae (softshell turtles), Iguanidae (iguanids), Teiidae (whiptails), Scincidae (skinks), Anguidae (glass lizards), Colubridae (colubrids), Elapidae (coral snakes) and Viperidae (pit vipers). Of the reptiles, the turtle would have been the most

advantageous for a food resource because of their size, meat per kill, and ease in collecting. The common snapping turtle (Chelydra serpentina) is found in rivers, ponds and muddy areas throughout the Pearl River Basin. The common snapping turtle reaches weights up to 20 pounds, while the alligator snapping turtle (Marcrochelys temmicki) may reach weights up to 200 pounds (U. S. Army Corps of Engineers 1975). The painted turtle (Chrysemys picta) is abundant around ponds and streams and is easily captured. The box turtle (Terrapene carolina) is strictly terrestrial, abundant and easily captured. Turtle eggs and alligator could have also been utilized by aborigines in the study area.

2.7.2.5 Birds - Approximately 100 species of birds are known to occur in the Pearl River Basin. Some of the species are permanent, while others are migratory. The majority of the species are the small perching variety (Thorne 1977). Many of these species are not considered adequate as a food resource. However, many of the waterfowl could have been exploited as a food source. Waterfowl found in the area include wood ducks (Aix sponsa), mallards (Anas platyrhynchos), black duck (Anas rubripes), bluewinged teal (Anas discors), egret (Casmerodius albus), great blue heron (Ardea herodias), green heron (Butorides virescens), American bittern (Botaurus lentiginosus) and the American coot (Fulica americana).

The raptorial birds, such as vultures, hawks and eagles, were probably present, but they probably were not a substantial food source. Two other birds that were probably exploited as a food resource were the passenger pigeon and the wild turkey. Passenger pigeons (Ectopites migratorius) were present in Mississippi in large numbers up until historic times (Ibid). Due to their large numbers, the pigeons were probably utilized as a food source. Wild turkey (Meleagris gallopauo) was once much more abundant in this region and could have been an important food-producing bird. These large birds have been reported as representing a substantial portion of the faunal remains recovered from archeological sites in the southeastern United States (Ibid). Common hunting techniques for birds included various types of traps and bolo hunting.

2.7.2.6 Mammals - Due to their size and availability, many of the species of mammals could have supplied a dependable food source for the indigenous population in the Pearl River Basin. Approximately 50 species of mammals occur naturally in the study area and adjacent lands (Lowery 1974). Families which may occur in the study area include Didelphidae (opposums), Soricidae (shrews), Talpidae (moles), Vespertilionidae (vespertilionid bats), Molossidae (free-tailed bats), Leporidae (hares and rabbits), Sciuridae (squirrels), Geomyidae (pocket gophers), Castoridae (beavers), Capromyidae (coyote and hutia), Cricetidae (New World rats and mice), Muridae (Old World rats and mice), Canidae (dogs and wolves), Ursidae (bears), Felidae (cats), Procyonidae (raccoons), Mustelidae (weasels, minks and skunks) and Cervidae (deer).

Of these families, more important species that could have served as dependable food sources include the opossum (Didelphis marsupialis), cottontail (Sylvilagus floridanus), swamp rabbit (Sylvilagus aquaticus), grey squirrel (Sciurus carolinensis), fox squirrel (Sciurus niger), beaver (Castor canadensis), muskrat (Ondatra zibethica), red fox (Vulpes fulva), grey fox (Urocyon cinereoargenteus), raccoon (Procyon lotor), bobcat (Lynx rufus), mink (Mustela vison) and the white-tailed deer (Odocoileus virginianus). Thorne (1977) notes several other mammals which are now extinct or threatened in this region that could have served as food sources. These include the bison (Bison bison), red wolf (Canis rufus), Florida panther (Felis concolor coryi) and the black bear (Ursus americanus). The woodland bison probably occurred only in very small numbers and was probably not a significant source of food. Of all the mammals present, the white-tailed deer probably represented the primary source of meat for aboriginal inhabitants (Parmalee 1975). Since deer are browsing animals which feed primarily on leaves, twigs, acorns and fruits of trees and shrubs, they were probably extremely abundant due to plentiful food supply in this region. In addition to being abundant in this area, deer also represented an excellent consumption item in terms of amount of meat per kill (Thorne 1977).

3. PREVIOUS INVESTIGATIONS

3.1 Previous Archeological Investigations

3.1.1 Early Investigations

During the period 1840-1914, the Classificatory-Descriptive Period in American archeology emerged. Throughout this era, according to Willey and Sabloff (1974:42), there was a "steady increase in the discovery and description of antiquities as the United States expanded westward and as the white man penetrated into other parts of the North and South American continents." Most of the archeology practiced during this period was sponsored by the government, universities, museums and scientific societies (Ibid).

According to Wailes (1854), Sir Charles Lyell visited Mulatto Bayou in 1826 and prepared a rough sketch map of the Ancient Earthwork Fortification Site (22Ha515), some nearby mounds and a shell bank. Lyell's A Second Visit to the United States of North America is cited by Wailes as a reference for this statement. However, a search through the original editions of this book by Williams (n.d.:10) failed to produce the information quoted by Wailes. Either Wailes was mistaken in his reading of Lyell, or he had another volume in mind when he made the statement.

In 1852, B.L.C. Wailes (1854) conducted a geological survey of Mississippi. He visited the sites described by Lyell, compared them with the sketch made in 1826 and recorded site 22Ha515. At that time the sites were situated on land belonging to Judge Louis Daniels who lived nearby in his plantation home. According to Wailes, Judge Daniels believed the site to date from the early French period, about the time of the settling of Biloxi in 1699. Wailes, however, had a different opinion. Due to the presence of two live oaks, at least three feet in diameter, and a magnolia tree, of at least four feet in diameter, he surmised the site to be of considerable antiquity. Wailes (Ibid) described the wall as containing a good deal of shell in some sections and mentioned that many early historic items, as well as Indian relics, were still to be found in the area.

In the nineteenth century, there are no references to scientific exploration in the Pearl River Basin. Eastern archeologists were primarily concerned with the mounds of the Ohio and Mississippi Valleys and surrounding areas (Willey and Sabloff 1974:43) and consequently, it was the areas containing the largest concentration of mounds which received the most attention. The first significant contribution of this period was made by Squier and Davis (1848) who travelled throughout the Mississippi Valley recording and excavating mounds for the newly-founded Smithsonian Institution (Willey and Sabloff 1974:43-44). Other early surveys were conducted by Lockett (1873b), Thomas (1894) and Beyer (1896, 1898).

A cache of 469 imperfectly finished jasper objects was uncovered in Lawrence County, Mississippi in 1875 (Fulton 1898). These artifacts were studied and described by Rau (1877) as specimens made by the hands of a special lapidary. Fulton (1898:91-95) discussed this significant find, as well as others in Mississippi, in Pre-Historic Jasper Ornaments in Mississippi.

According to Fulton (Ibid:91), there was an outline of a "prehistoric fort" in the field where the cache of 469 jasper artifacts was discovered. Fulton, writing in 1898, stated that the outlines of this fort could "easily be traced until a few years ago." The location of these earthworks was about three-quarters of a mile east of Hebron, Mississippi (Lawrence County).

In 1904, Colonel Louis J. Dupree and Thomas B. Birdsong investigated mounds in Copiah and Simpson Counties (Brown 1926). They excavated a cluster of five mounds near Rockport, close to the Pearl River. In the central mound they found several fine pieces of pottery and many skeletons. One of the mounds is described as being almost flat with the surface. In it was found the remains of a fire and the sharpened point of a stake from below where it had been burned to the ground. In two of the mounds, copper objects including beads and "spool-shaped" artifacts were recovered. Two of the mounds were located on the sides of hills while the rest were in valleys and river bottoms (Ibid:7).

In 1914, chronology building became a major impetus to archeological investigations. It continued to be a dominant force until the 1960's (Willey and Sabloff 1974:88).

In 1916, Calvin S. Brown (1926), of the University of Mississippi, visited shell middens in the vicinity of Bay St. Louis (Hancock County) to the east of the study area. In addition to the shell middens, he noted some mounds in Madison County, Mississippi which may be the same as the Culley Mounds (22Md504). They are described by Brown (Ibid:29) in the following:

Near the Culley homestead about four miles east of Madison Station, Madison County, and about twelve miles from Jackson on the Natchez trace, is a mound, which has been spread and lowered much by plowing. It is only 3 or 4 feet high. I saw a number of bones, teeth, pebbles, and flakes of flint but no potsherds. Many skeletons are said to have been plowed from the mound.

Archeological investigations were continued in Louisiana and Mississippi by the Smithsonian Institution in the 1920's. The results of this work was reported by Collins (1927) and Fowke (1927). No sites in the study area were recorded.

In 1927, a state survey was initiated by the Mississippi Department of Archives and History. During the summers of 1927, 1928 and 1929 Chambers and Ford excavated sites and made surface collections from sites in west-central Mississippi (Ford 1936:1). The Allsworth/Cully

Site (22Md504) was excavated by Chambers and Ford in 1929. A skeleton surrounded by coffin nails and a few brass buttons was uncovered (Work Projects Administration 1940b:7).

Chambers (1935) continued the work of the state survey in the summers of 1932-1935. During this period he examined the larger part of the southern half of Mississippi. During the 1933 season he visited portions of the Pearl River and recorded sites 22Ha500, 22Ha506 and 22Ha507.

3.1.2 WPA ERA

In the 1930's, the Works Progress Administration (WPA) sponsored archeological work in Louisiana and Mississippi. People out of jobs were hired to work as crew members on excavations and archeological surveys in order to alleviate the chronic unemployment sweeping the country at that time. These federally-backed work forces provided archeologists with the manpower to collect large amounts of data. As a result, many important archeological questions were addressed.

Ford and Quimby (1945), for example, aided by workers from the WPA, excavated several Tchefuncte Period sites in Louisiana during the late 1930's. The result of their work was the publication of The Tchefuncte Culture, An Early Occupation of the Lower Mississippi Valley which provided one of the early syntheses of this important archeological period.

In 1938, the Louisiana State Archeological Survey, a project of the WPA sponsored by Louisiana State University, was initiated. The project was directed by Fred B. Kniffen and James A. Ford (Gibson 1977:12). The results of this survey were published under the title Archeological Explorations in Louisiana during 1938 (Ford 1939).

According to Robert Neuman (1981:personal communication), archeological work in Louisiana, conducted under the auspices of the WPA, was not very extensive. Several miscellaneous works were published dealing with such subjects as mound builders of the Mississippi Valley (Walker 1932), Hopewell mound builders in Louisiana (Setzler 1934) and Choctaw Indians of the Mississippi Valley (Ray 1936). In Mississippi, WPA crews located and recorded early Indian and Spanish trails (Work Projects Administration 1940a), Indian mounds and sites (Work Projects Administration 1940b, 1940c) and major prehistoric and historic sites of the state (Work Projects Administration 1940d). Data concerning archeological sites in Mississippi were gathered and assembled in folders by WPA workers. Much of this information was never published (Federal Writers' Project: Statewide Source Material 1936).

In the 1930's and 1940's, James A. Ford was a major personality in Southeastern Archeology. His work provided the archeological community with major interpretations of data collected in the Southeast.

In 1933, financed by a Grant-in-Aid from the National Research Council, Ford (1936) surveyed and made collections in the Mississippi River Valley region of northern and central Louisiana. He returned to

the area in 1935 and made additional collections in the course of a survey sponsored by Louisiana State University.

Based on the results of surveys conducted by Chambers (1935) and Chambers and Ford (Ford 1936), the first broad outline of the chronology of the Lower Mississippi Valley was constructed (Ibid). According to Gibson (1977:11), "Ford's outline gave strength and direction to archeology in the Southeast, which now became oriented toward the problem of identification and chronological arrangement." Ford (1938) formally presented and explained his chronological method in detail in A Chronological Method Applicable to the Southeast.

In the 1940's, Ford co-authored two important papers dealing with the Southeast. Ford and Willey (1941) combined to write An Interpretation of the Prehistory of the Eastern United States and Ford and Quimby (1945) produced The Tchefuncte Culture, An Early Occupation of the Lower Mississippi Valley. Works dealing with prepottery cultures in Louisiana (Webb 1948) and early horizons in the Southeast (Haag 1942) were published in the 1940's.

In the early 1940's, Jesse D. Jennings (1940, 1944, 1946) prepared a number of summaries dealing with archeological work which had been conducted along the Natchez Trace Parkway. In these summaries he discussed the purpose of the parkway along with future developments planned for this scenic road. Sites which had been excavated were discussed and cultural sequences for the area presented. No archeological sites were recorded along the Natchez Trace in the study area south of Ross Barnett Reservoir (Jesse Jennings 1981:personal communication).

3.1.3 Recent Investigations

It is during this period that salvage or contract archeology came into being. A change in archeological purpose occurred with the emphasis now placed on salvaging data from areas designated for destruction (project specific) instead of obtaining information from wide areas solely for the acquisition of knowledge. The vast majority of archeological work conducted during this period falls under the heading of salvage or contract archeology.

The first salvage operation in the Pearl River Basin was a survey accompanied by limited testing at the proposed Pearl River Reservoir (now known as Ross Barnett Reservoir) by Robert L. Rands (1958) under the auspices of the University of Mississippi, in collaboration with the Mississippi Department of Archives and History and the National Park Service. In June of 1958, Rands surveyed portions of Hinds, Leake, Madison, Rankin and Scott counties. Eight new sites were located within the boundaries of the reservoir as well as a number of additional sites a short distance outside the reservoir limits. A total of 24 sites is mentioned in this report. Testing was performed at five sites: 22Ra502, 22Ra504, 22Md505, 22Md509 and 22Hi512. Rands concluded that the majority of the archeological sites along this part of the Pearl River was inhabited during the Woodland or Burial Mound period. His conclusion was based on the presence of small conical mounds and Baytown Plain pottery.

In the fall of 1958, Robert L. Rands (1959), along with William T. Sanders of the University of Mississippi, followed up the Pearl River Reservoir survey by conducting additional excavations at the Wills Site (22H1512) in Hinds County, Mississippi. The presence of Poverty Point remains and pottery suggests that the site was occupied over a considerable time span. Rands also believes that cultural affiliations of this site may have been especially strong to the east, rather than with the closely adjacent Mississippi Valley.

Important works appearing in the 1950's were written concerning such subjects as an archeological survey in the Lower Mississippi Alluvial Valley (Phillips, Ford and Griffin 1951), Choctaw Archeology (Haag 1953), prehistoric settlements in coastal Louisiana (McIntire 1954), the Issaquena Phase of Lower Mississippi Valley prehistory (Greengo 1964) and prehistoric Indian settlements in the Mississippi Delta (McIntire 1958).

The 1960's marked the beginning of modern archeology in America, referred to by Willey and Sabloff (1974:178) as the Explanatory Period (1960-present). The introduction of revolutionary concepts such as "systems theory" and "logico-deductive reasoning," as well as a re-emergence of "evolutionary theory," characterize the period.

Although archeological activities, especially salvage work, increased rapidly in many areas of the country in the 1960's, very little field work was conducted in the basin during this time.

The Boyd Site (22Md512) was briefly described and evaluated in a letter report by Jennings (n.d.) prior to excavation activities. Jennings stated that surface collecting was conducted in the vicinity of Mound 4 only due to the density of vegetation in the other areas of the site. As a result, the cultural affiliation of this site was based solely on this limited collection. The Boyd Site was summarized by Jennings as consisting of six mounds and a village of unknown size. Chronologically, he considered it as "barely prehistoric in time" and related to some of the larger sites to the north and west (Ibid:3). Jennings stated that, on the basis of surface material, the site was inhabited during the time of the Deasonville Horizon with evidence of Middle Mississippian contact, as well as historic Choctaw occupation or contact (Ibid). It was recommended that the Boyd Site be acquired for preservation with the ultimate view of development as a parkway historic site display.

Charles F. Bohannon (1963), of the National Park Service, tested portions of the Boyd Site (22Md512) likely to be adversely affected by the relocation of a segment of the Natchez Trace Parkway. The areas tested did not include any of the six mounds present at the site. Two burials and one house floor were uncovered. Due to the preliminary nature of this work no definite conclusions were presented.

Further archeological investigations were conducted at the Boyd Site (22Md512) in 1964 (Bohannon 1965a). Three of the mounds were excavated and testing was conducted in the presumed village area. The mounds were described by the author as cemetery areas due to the large number of

burials found in each one. An additional house floor and burial were discovered in the village area. Based on pottery types and other traits, it was concluded that the Boyd Site was related to other sites to the west. Bohannon (Ibid:65) believes that the inhabitants of the Boyd Site never adopted the cultural traditions of the Mississippi alluvial valley (which he refers to as the Middle Mississippian) as they were apparently too far from the mainstream of events to feel the full impact of this new tradition. An historic component was recognized in Mound 4 in the form of Chickachae Combed sherds and a burial associated with glass trade beads. Chronologically, the site has been assigned to the Plaquemine period and was probably occupied during a time span of about 150-250 years. A single radiocarbon date of 1080 \pm 80 (AD 790-950) was taken from a burned log in Mound 2.

Archeological salvage operations were conducted at the Fireplace Mound (22Md506) under the direction of Charles F. Bohannon (1965b) in 1964. Although only six burials were traced, it was estimated that the mound originally contained at least 27 interments. Fireplace Mound was apparently constructed due to continuous use. According to Bohannon (Ibid:12), this can be explained either by a cemetery site or the final repository of a charnel house, which built up rapidly as a continuous stream of bundle burials was laid down and covered. Bohannon (Ibid) described the site as being related to the Baytown Complex and sites in the Big Black River Valley although, in his opinion, there was not enough information to assign it to a specific archeological unit. Chronologically, the site was apparently coeval with what Bohannon refers to as late Baytown. This statement was largely based on the presence of shell-tempered and clay-tempered sherds at the site (Ibid). According to Bohannon, no surface finds have been recorded in the immediate vicinity of Fireplace Mound either by his work or previous surveys.

In 1966, Robert S. Neitzel conducted a literature search of the cultural resources of the Pearl and Big Black drainages. Although Neitzel did not conduct an actual field survey (Sam McGahey 1982: personal communication), his name appears on several site forms as being recorded during a "Pearl River Survey." One such site (22Lw500) is located in the study corridor. It is believed that three manuscripts (Anonymous n.d.a., Anonymous n.d.b, and Neitzel n.d.) may be reports documenting the results of his work.

According to Webb (1968), a Poverty Point site on the east side of the Pearl River Delta in Hancock County, Mississippi was excavated by Gary Kraus (an amateur archeologist) in 1967. Poverty Point objects such as baked clay balls, fiber-tempered pottery, animal bones, bone tools, Late Archaic projectile points, micro-flints and two polished stone celts were found above a level containing stone tools, animal bones, bone awls, steatite vessel fragments, hematite plummet, a red jasper bead and gorget fragments. Webb does not mention the name or number of the site.

In 1969, John Connaway and Sam McGahey (1970) of the Mississippi Department of Archives and History conducted an archeological survey of Hinds County, Mississippi. Previously recorded sites were rechecked, new

ones were located and the more important sites were evaluated for nomination to the National Register of Historic Places. A total of 27 new sites were recorded during the survey. Sites recorded in the corridor were 22Hi526 and 22Hi527 (Site records, Mississippi Department of Archives and History).

The Claiborne Site (22Ha501) was excavated during the summer field sessions of 1969 and 1970 by students from Mississippi State University under the direction of Richard A. Marshall (1970a). During the 1969 season, work consisted of trenching several areas at the north end of the site. A large collection of artifacts and other data were obtained and a report is in preparation (Richard Marshall 1981:personal communication).

Two articles dealing with the Poverty Point Culture appeared in American Antiquity. These syntheses were written by Gagliano and Saucier (1963) and Webb (1968) and mention specific sites in the basin. An article concerning Poverty Point sites on the Mississippi Gulf Coast was written by Lowry (1969a) and published in the Mississippi Archaeological Association newsletter. Paul Mangum (1963) wrote a B.A. thesis entitled An Archeological Survey of the State of Mississippi East of the Lower Mississippi River Valley. This work includes portions of Hinds and Madison Counties in the Pearl River Basin.

The amount of archeological work conducted in the Pearl River Basin in the 1970's increased at least twofold over the previous decade. Copious reports and articles dealing with the archeology of Louisiana and Mississippi were published and there was a dramatic rise in the number of salvage operations in the basin.

An important article concerning the transition between Archaic and Poverty Point Cultures at the mouth of the Pearl River was written by Gagliano and Webb (1970). The Cedarland Plantation Site (22Ha506) and the Claiborne Site (22Ha501) were used as models in the discussion.

Other articles concerning the Poverty Point Culture were written by Webb (1970, 1977) and Dean (1970). Works dealing with the archeology of coastal Louisiana were written by Springer (1973) and Neuman (1977). Articles dealing with the Mississippi coastal area were written by Pouncey (1970) and Neumaier (1974). Archeological surveys were reported by Connaway and McGahey (1970) and Penman (1977) and overviews of Mississippi archeology were prepared by Marshall (1973) and McGahey (1975). Syntheses of the archeology of Louisiana and the Lower Mississippi River Valley were written during this period by Phillips (1970), Brain (1971) and Haag (1971, 1978). Rivet's (1973) thesis, dealt with a reappraisal of Tchefuncte ceramic typology. Gibson (1974c) wrote an article discussing prehistoric diffusion in southeastern Mississippi.

The Mississippi State University field school, under the direction of Richard Marshall, returned to the Claiborne Site in 1970 and continued excavation activities begun the previous year (Marshall 1970a). Activities were concentrated on an apparently undisturbed flat area of the site. The artifact sample consisted mainly of Poverty Point objects as well as possible specimens from the Late Archaic Period.

Soil and charcoal samples were collected but have not been analyzed at the writing of this report. Marshall (Ibid) believes that the Claiborne Site represents two or more closely related sequential phases of the Poverty Point Culture and possibly extending in areas of the site from late Archaic through Poverty Point and perhaps into the early Tchula (Tchefuncte) Period. In addition to excavations at the Claiborne Site, some local surveying was carried out. An early historic Indian occupation was noted near the east end of the Ancient Earthwork Fortification site (22Ha515) which Marshall believes may represent an historic Acolapissa village. A Tchefuncte shell midden was also located near Bayou Caddy (just east of Waveland, Mississippi). A preliminary identification of the faunal remains from the Claiborne Site was conducted by Smith (1974).

In 1972, a portion of the Ancient Earthwork Fortification Site (22Ha515), first recorded by Richard Marshall in 1970, was excavated by the Gulf Coast Chapter of the Mississippi Archaeological Association and students from the University of Southern Mississippi under the supervision of J. Mark Williams (n.d.). The primary goal of this excavation was to determine when the earthwork was built. Work was carried out mainly at the eastern end of the earthwork, although some testing was also performed at the western end. Williams (Ibid:83) believes the earthwork was begun possibly as early as 400 B.C., in Tchefuncte times, with the bulk of construction occurring during a mid-to-late Marksville period. The eastern end of the site, according to Williams (Ibid), was reoccupied in early historic times by an historic Indian group, possibly Biloxi, Pensacola, Apalachee or Acolapissa.

In 1973, a shell midden (16WA8), in Washington Parish, Louisiana was tested by Kathleen Byrd and Robert Neuman. Artifacts collected from this site revealed that it was occupied during the Mississippian period (Robert Neuman 1981:personal communication).

Sam McGahey (1973) performed an on-site inspection of the Brashear Creek Basin sewer project in Madison County, Mississippi. No sites were recorded.

In 1975, McGahey surveyed the proposed Byram Industrial Park (Hinds County) and recorded sites 22Hi556 and 22Hi557 (Newsom 1975). Site 22Hi556 was recommended for testing prior to construction activities.

Jack Wynn, et al (1975) conducted an archeological survey of four proposed construction sites in George and Pearl River Counties, Mississippi. Two sites (22Pr519, 22Pr520) were located outside the impact area.

In July of 1975, Shenkel (1975) conducted an archeological survey of two bridge crossings (I-59 and I-10) over the East and West Pearl Rivers, Louisiana. The area to be impacted on I-59 over the West Pearl River is, according to Shenkel, an area of high archeological potential; however, no sites or other archeological remains were noted. The area to be impacted by the proposed construction over the East Pearl River (I-10) lies in alluviated swampy bottom lands and no archeological

remains were noted on either bank of the river for 150 meters in any direction.

In 1975 (Marshall 1976), an archeological survey of four proposed pipeline construction sites in Washington Parish, Louisiana was conducted. A small test pit in the area at the pipeline crossing of the Pearl River was dug. No cultural materials were recovered and no recommendations were made.

In 1976, a literature search and field survey of the potential impact area of the proposed Edinburg Lake in Neshoba County, Mississippi was conducted under the direction of James R. Atkinson (1976) of Mississippi State University. This study represents the first systematic site survey to be conducted in the county. Data collected during this survey indicate that most of the occupation was during the Middle and Late Archaic periods. Information concerning the Early Archaic period is sparse and the only evidence of Paleo occupation is a single Paleo-like point. Sites were typically situated on the first terrace or adjacent lower hills bordering the bottomlands (Ibid:46). Artifacts relating to the Early, Middle and Late Woodland periods were also recovered. No evidence of the burial mound mortuary complex frequently found associated with Marksville ceramics elsewhere was found in the study area (Ibid:46).

A cultural resources survey of the proposed East Side Park, West Side Park and Industrial park, Picayune, Pearl River County, Mississippi was conducted by Howell (1977). No sites were recorded.

H. Edwin Jackson, Jr. (1977) conducted an archeological assessment of the Slidell Airport Expansion, St. Tammany Parish, Louisiana in January 1977. No archeological material was recovered.

Hyatt (1977a) conducted a cultural resources survey of a proposed bridge replacement on Mississippi Highway 587 in Monticello, Lawrence County, Mississippi on December 14, 1977. No sites were recorded.

Hyatt (1977b) surveyed the proposed additional two lanes to U.S. Highway 98 between the Walthall and Lamar County lines, Marion County, Mississippi. No sites were located.

Hyatt (1977c) surveyed three proposed bridge replacements on Mississippi Highway 587 between Columbia and Morgantown, Marion County. No sites were recorded.

A cultural resources survey of six proposed bridge replacement projects on Mississippi Highway No. 43 between Mendenhall and Silver Creek was conducted by Hyatt (1977d). No sites were recorded.

A cultural resources survey of proposed bank protection at Pearl River Bridge on U.S. Highway 84, Lawrence County, Mississippi was conducted by Hyatt (1977e). No sites were recorded.

Peter Nichols (1978) conducted a cultural resources survey of 19 microwave tower and substations in Louisiana. Two of these locations

(Slidell and Talisheek) are located in the study area. No cultural material was found.

Hyatt (1978) conducted a cultural resources survey at the Elton Place Subdivision, Hinds County, Mississippi, on April 1, 1978. No sites were recorded.

Robert S. Neitzel conducted an archeological survey of the Angie Sewer Project, (Neitzel 1978a) and the Varnado Sewer Project, (Neitzel 1978b). No sites were recorded at either location.

Philip G. Rivet (1978) conducted a cultural resources survey of Bogue Lusa Creek Bridge replacement and approaches on Route La 439 in Washington Parish, Louisiana. One prehistoric site (16WA36) was located. The site was described in the report as insignificant.

A cultural resources study of the proposed Gary Estates, Siwell Road, Byrum, Mississippi was conducted by Marshall (1978). No prehistoric sites were recorded. Two historic sites were noted. One is a standing structure which probably predates World War II and the other is a scatter of surface artifacts suggesting a house site dating from the 1830's to post-Civil War. Artifacts of the eighteenth century were also recovered at this site.

Robert J. Floyd (1978) conducted a magnetometer survey in the Pearl River in order to identify magnetic anomalies that might indicate a possible resource in the river bottom and/or banks. Two anomalies were discovered. It was suggested that Target No.2 be avoided during mining operations. Target No.1 is not believed to be associated with a shipwreck.

Dale Greenwell (1979) conducted a survey of a 25 acre tract in Lot 83, Port Bienville Industrial Park, Hancock County, Mississippi. This work was carried out under contract with the Hancock County Port and Harbor Commission. Greenwell (Ibid) reported three site areas in the impact zone ranging from Archaic through Marksville times. This area was subsequently re-examined by New World Research (1979a). Although their research design was formulated to relocate and evaluate the site areas identified by Greenwell in 1979, no surficial or subsurface indication of the presence of those sites was found.

New World Research (1979b) performed a cultural resources study of Lot 84 of the Port Bienville Industrial Park, Hancock County, Mississippi in 1979. No sites were recorded.

In August of 1979, Philip Rivet (1979) conducted a cultural resources survey of the I-10 and LA 1090 route, U.S. 190 in St. Tammany Parish, Louisiana. Two standing structures, a mobile home and a storage shed, were noted. Neither were considered to have historical significance.

In December, 1979, a cultural resources survey of two proposed disposal sites near Cadet Bayou and Port Bienville, Hancock County, Mississippi was conducted by Dottie Gibbens and Charles Moorehead (1980). No sites were recorded at the Port Bienville location.

James Lauro (1979) surveyed approximately 800 acres in Madison County, Mississippi for Smith and Sanders, Inc. of Jackson. No sites were recorded in the project area. Two prehistoric sites (22Md610, 22Md611) were located adjacent to the project area.

A surface inspection of the Claiborne Site (22Ha501) and areas to be impacted by the Port Bienville Industrial Park was conducted by Howell (1979a). Three areas of possible undisturbed cultural deposits were noted.

Howell conducted a cultural resources survey of the Lost Lake Subdivision (1979b) and the proposed A. H. Harkins Development area (1979c). No sites were recorded at either location.

In 1979, an early canoe was found near Georgetown in Simpson County by Henry and Wilbur Jones. Radio carbon testing of a section of the canoe yielded a date of AD 1610 + 70 years (Adams 1981). According to Sam McGahey (1981:personal communication), the find represents an Indian canoe made with very early metal tools. He believes that it reflects an important transitional period in Indian culture as it is not as primitive as the earliest canoes which have been found in Mississippi, the oldest of which is dated AD 1470, nor as advanced as the pirogue canoes whose later design and construction were influenced by European settlers.

A cultural resources study of the Pearl River mouth area was prepared by Coastal Environments, Inc. (Gagliano 1980) for the U.S. Army Corps of Engineers, New Orleans District. No prehistoric sites were recorded. It was recommended that Study Areas IV and V be monitored during construction activities and that the borrow pit areas at Study Area III be inspected after surface vegetation has been cleared.

Mark T. Swanson (1980) tested the Johnson Site (22Ha540), a nineteenth century house at Port Bienville Industrial Park, Hancock County, Mississippi. The exact location of the house was not determined although analysis of the artifacts suggested occupation at the site from the mid-nineteenth to the early twentieth century. A 1950's vintage cattle-dipping vat was also located.

Hyatt (1980) conducted a cultural resources survey of the Copiah Creek Watershed, Copiah County, Mississippi, between August 16, 1980 and September 7, 1980. No sites were recorded.

Oakley (Mistovich 1980) surveyed a proposed gas line crossing the Pearl River, Lawrence County, Mississippi on November 20, 1980. No cultural resources were recorded.

Sam McGahey (1980) visited the White Site (22Lw514) and inspected the site and environs. A surface collection was made and the site described in an unpublished manuscript. McGahey recommended testing for in situ materials.

A cultural resources survey of approximately 22 acres in Hinds County was conducted by Lauro (1980) for the Brookwood Development Company. No sites were recorded.

A cultural resources survey of proposed bank stabilization at Pearl River Bridge at U.S. Highway 84, Lawrence County, Mississippi was conducted by Hyatt (1981). No sites were recorded.

A preliminary archeological investigation of the Jackson Prairie Physiographic Province (1% random sample) was conducted in April and May of 1981 by the Mississippi Department of Archives and History (James Lauro 1981:personal communication). The survey included Hinds, Madison, and Rankin Counties. Seven sites were recorded (site numbers have not been assigned at this time). The survey will continue in mid-June, and last through January of 1982 (James Lauro 1981:personal communication).

Amateur archeological societies in Louisiana and Mississippi have made significant contributions toward a better understanding of the pre-history of the Southeast. Societies in the Pearl River Basin are discussed below.

The Louisiana Archaeological Society was organized in 1974. A bulletin (Louisiana Archaeology) is published annually and a newsletter (Newsletter Louisiana Archaeological Society) appears quarterly.

The Mississippi Archaeological Association was organized in 1966. A bulletin (Mississippi Archaeology [formerly Mississippi Archaeologist]) is published semi-annually and a newsletter (Newsletter From the President's Desk) appears bi-monthly.

The Southeastern Archeological Society, located in Bogalusa, Louisiana, was organized in 1972. This society does not publish any bulletins or newsletters.

3.2 Previous Historical Investigations

3.2.1 Early Investigations

The earliest accounts of the Pearl River Basin were made by explorers who visited the area in the seventeenth and eighteenth centuries. Valuable information was compiled and preserved in the form of maps and journals. An annotated list of maps depicting the Pearl River, beginning in 1720, appears in Appendix G.

Some of the early explorers to visit the Pearl River Basin were d'Iberville in 1699, Penicaut in 1699, Bienville in 1699, Roullet in 1732 and Bartram in 1777.

Most of these explorers kept diaries or journals of their travels and experiences, providing researchers with an extremely important source of information concerning the New World. Journals by Penicaut (McWilliams 1953), Roullet (Rowland and Sanders 1927) and Bartram (Van Doren 1955), for example, have contributed greatly to a better understanding of the early history of the Pearl River Basin.

Some of the early explorers and traders used the information they collected on their expeditions to compile histories and geographies of the areas they visited. Examples of these early works are provided by Hennepin (1683), Bonrepos (1720), Charlevoix (1744a, 1744b, 1744c), Le Page Du Pratz (1758, 1763, 1804), Adair (1775), Hutchins (1784) and Imlay (1797).

In the nineteenth century, as knowledge of Louisiana and Mississippi increased, numerous works concerning these areas, ranging from histories to geographical accounts, appeared.

Books dealing with Louisiana history were written by Dubroca (1802), Stoddard (1812), Brackenridge (1817), Martin (1827-1829), La Harpe (1831), Gayarre (1846-1847; 1851-1852; 1854-1866), Greenhow (1856), Bunner (1861), Bartlett (1875) and King and Ficklen (1893).

Geographical works about Louisiana were compiled by Anonymous (1803), Darby (1816), Brackenridge (1817), Lockett (1870, 1873a), Featherman (1871), Dennett (1876), Harris (1881) and Stubbs (1895).

Histories concerning Mississippi were published by Hall (1801), Monette (1846), Hutchinson (1848), Claiborne (1876, 1880), Wall (1882), Fulkerson (1885), Duval (1887), Lowry and McCardle (1891), Goodspeed Publishing Company (1891) and Davis (1899).

Early histories dealing with East and West Florida and the Mississippi Territory were compiled by Romans (1775), Williams (1827, 1837) and Pendergrast (1803).

3.2.2 Recent Investigations

Historical scholarship concerning the study area expanded considerably in the twentieth century. Some of the early histories of this period dealing with Louisiana were written by Gayarre (1903), Fortier (1904, 1914), Goodspeed (1904), King (1905), Phelps (1905), Magruder (1909), Robertson (1911), Butler (1924) and The American Historical Society (1925). Mississippi works include Riley (1900, 1902), Cuming (1904), Hall (1906), Rowland (1907, 1925), Chambers (1922), Rainwater (1937), Ethridge (1938) and Snyder and Bennett (1939).

Histories concerning 14 counties and parishes in the Pearl River Basin have been written. They are Copiah County (Sartin 1959), Hancock County (Claiborne 1876), Hinds County (Rowland 1922; Ruff 1941; Bacon 1959), Jefferson Davis County (City of Prentiss, Mississippi 1961-1962), Lamar County (Slade 1978), Lincoln County (Abshagen 1959), Madison County (Anderson 1967), Marion County (Marion County Historical Society 1976), Pearl River County (Scruggs 1933; Davis 1975), Pike County (Conerly 1909; Gillis 1922; Williams 1978), Simpson County (McLendon 1954; Bennett 1962; King n.d.), Walthall County (Williams 1978), St. Tammany Parish (Schwartz 1953; Ellis In Press) and Washington Parish (Carter 1931; Maxwell 1971). Brieger (1980) compiled Hometown Mississippi which presents information concerning the histories of various counties in the state.

Towns in the Pearl River Basin for which histories have been compiled include Bogalusa, Louisiana (Quick 1942, 1946; Goodyear 1950), Canton, Mississippi (McCool n.d.), Hazlehurst, Mississippi (Hazlehurst Historical Society 1976), Jackson, Mississippi (McCain 1953; Powell n.d.), McComb, Mississippi (Gillis 1922; Emmerich 1964, 1966; McComb Chamber of Commerce 1972) and Slidell, Louisiana (Slidell Junior Chamber of Commerce 1960; League of Women Voters of Slidell 1965).

Theses and dissertations often provide valuable information for researchers. Some of the subjects which relate to the Pearl River Basin include reconstruction (Cross 1939; Highsmith 1952), history of Bogalusa (Quick 1942), lumbering (Hickman 1958), land ownership in Louisiana (Downs 1960), transportation in Mississippi before 1860 (Robertson 1961), railroads (Cotterill 1922, 1924; Odom 1961; Estaville 1970; Burkhardt 1975; Hoerl 1975), early traces (trails) of Mississippi (Stark 1969), migration into Mississippi from 1798-1837 (Walters 1969) migration into Louisiana from 1834-1880 (Treat 1967), extinct towns in Mississippi (Adkins 1972), overland travel in Mississippi before railroads (Hill 1930), towns in ante-bellum Mississippi (Hearn 1970), military operations in and around Jackson, Mississippi (Adams 1950), Mississippi as described by travelers during the years 1800-1861 (Box 1952) and credit land sales east of the Pearl River, 1811-1815 (Lackey 1975).

The Works Progress Administration was very active in the Pearl River Basin. A good deal of historical research in Louisiana and Mississippi was sponsored by the WPA in the 1930's.

The Historical American Buildings Survey (HABS), a WPA project, was created in order to utilize unemployed architects and photographers for the purpose of recording important buildings in terms of their architectural and historical significance. Teams of architects and photographers recorded and photographed buildings in towns all over the United States. A lack of imposed criteria as to which town and buildings were chosen resulted in a bias of the resultant sample (Bill Allen 1981:personal communication).

Another WPA project involved the compilation of guidebooks to the various states published under the "American Guide Series." Under the authorship of the Federal Writers' Project of the Work Projects Administration, guides to Louisiana (1941) and Mississippi (1949) were written. In addition, a manuscript describing the Mississippi Gulf Coast was prepared by WPA funds under the sponsorship of the Woman's Club of Gulfport (Federal Writer's Project 1939).

The WPA also sponsored large amounts of historical research in Mississippi, during the years 1936-1942. Most of the information collected during this period was never published and remains in the form of typed and handwritten manuscripts in libraries and other institutions throughout the state. Subjects covered include county histories, folklore, Indians, archeology, architecture, transportation, towns and pictorial histories.

According to Bertha Neff (1981:personal communication), Archivist at the Clerk of Courts in Covington, Louisiana, the only WPA projects dealing with St. Tammany Parish involved a search of church records. No WPA projects were initiated for Washington Parish (Sara Sanders 1981:personal communication).

Several translations of important journals and histories, written by early French explorers, have been published in the 20th century. Works which have been put into English include the writings of Hennepin (Cross 1938), Penicaut (McWilliams 1953), d'Iberville (Crouse 1972) and Roullet (Rowland and Sanders 1927).

Numerous recent studies have dealt with aspects of the economic history of the study area. For example, the role played by railroads in the development of Louisiana and Mississippi has been examined by Cotterill (1924), Johnson (1942), Corliss (1950), Black (1952), Turner (1953) and Estaville (1970, 1973).

Lumbering activities in the study area have been discussed by Hickman (1957, 1958, 1962, 1966, 1973), Weston (1943), Mancil (1969) and Burns (1969). These works deal with both the harvesting and transportation of forest resources.

Several political histories have dealt with secession and reconstruction. These include Garner (1901), Warmouth (1930), Caskey (1938) and Taylor (1974).

An important work by Robert W. Harrison (1951) dealing with Louisiana swamplands, including those along the Pearl River, was published in 1951. This work is entitled Land Reclamation in Louisiana Under the Swamp Land Grant of 1849.

During the mid-to-late 1950's, various Parish Development Boards, in cooperation with the Louisiana Department of Public Works, published surveys of their respective parishes; historical sections were included. No surveys were compiled for St. Tammany Parish (Bertha Neff 1981:personal communication) or Washington Parish (Sara Sanders 1981:personal communication).

Statistical information on each parish has been provided annually since the 1960's by the Public Affairs Research Council of Louisiana. These are valuable sources for information on the population and economic/occupational trends of the parishes of the Pearl River area.

With the rise of the historic preservation movement in the 1970's, Louisiana and Mississippi began systematic assessments of their historical resources.

In 1969, a comprehensive architecture survey of the state of Mississippi was initiated by the Mississippi Department of Archives and History in Jackson, Mississippi. This work is being conducted under Survey and Planning Grants from the Department of the Interior as authorized by the National Historic Preservation Act of 1966, which authorized the expansion of the National Register to include buildings

of state and local interest. At the present time none of the counties in the study area have been completely surveyed (Bill Allen 1981:personal communication). Appendix J describes sites on the Register in Mississippi.

Archeological and historical resources of the Pearl River Basin in both Louisiana and Mississippi were assessed under the Pearl River Comprehensive Basin Study (1970) prepared by the Southeastern Region of the National Park Service.

In 1974, the Division of Archeology and Historic Preservation, Baton Rouge, began an architecture study of the state. This survey was designed to locate and record buildings and districts of architectural importance and make recommendations for those eligible for inclusion on the National Register of Historic Places. At the present time St. Tammany and Washington Parishes have not received attention from this survey (Jessica Kimm 1981:personal communication).

In 1975, the Mississippi Department of Archives and History (Bailey and Lowrey, editors 1975) published a comprehensive state plan for historic preservation. This plan addresses both prehistoric and historic cultural resources.

A bridge survey was conducted by the Department of Transportation and Development, Baton Rouge, from August, 1979 through December, 1980. All of the bridges in the state of Louisiana were recorded and categorized according to certain variables such as date, length, number of spans and feature intersected (drainage), etc. (Gregg Ducote 1981:personal communication). Bridges recorded in the study area are listed in Table 3-1.

In January of 1980, the Division of Archeology and Historic Preservation, Baton Rouge, initiated an ongoing survey designed to locate and record the most significant bridges in Louisiana in terms of their architectural and historical importance. No bridges crossing the Pearl River have been studied at this time (Jessica Kimm 1981:personal communication).

In December, 1980, a comprehensive bridge survey of the state of Mississippi was initiated by the Mississippi Department of Archives and History, Jackson. This survey was designed to record all bridges in the state built before 1930. At the present time only state-maintained bridges have been recorded. None of these bridges span the Pearl (Bill Wright 1981:personal communication). Bridges which span the Pearl River are listed in Table 3-2.

During the summer of 1980, a study of log cabins in the Florida parishes (Feliciana excluded) was conducted under the direction of Dr. Jay Edwards of Louisiana State University. At this time the field portion of the study has been completed and the report is in preparation (Dr. Jay Edwards 1982:personal communication).

TABLE 3-1

PEARL RIVER BRIDGES (LOUISIANA)

PARISH	HIGHWAY	STRUCTURE TYPE	LENGTH IN FEET	NUMBER OF SPANS	DATE COMPLETED	FEATURE INTERSECTED
St. Tammany	US. 90	Steel Vertical Lift Span	570	17	1933	West Pearl River
St. Tammany	US. 90	High Steel Truss Swing Span	961	17	1934	East Pearl River
St. Tammany		Steel Bascule Plate Girder Span	4987		1970	East Pearl River
Washington	LA. 10	High Steel Truss Swing Span	3318	118	1953	Pearl River

TABLE 3-2

PEARL RIVER BRIDGES (MISSISSIPPI)

(This information taken from Official Highway Map of Mississippi, 1980 Published by the Mississippi Highway Department)

COUNTY	HIGHWAY	RAILROAD
Copiah	Mississippi Highway 28 3 unnumbered roads	-----
Hancock	U.S. Interstate I-10 U. S. Highway 90 (U.S. 190)	-----
Hinds	U.S. Interstate I-20 U.S. Interstate I-55 U.S. Highway 80 Mississippi Highway 25 2 unnumbered roads	2 ICG
Lawrence	U.S. Highway 84 1 unnumbered road	1 ICG
Marion	U.S. Highway 98 Mississippi Highway 35	1 ICG
Rankin	U.S. Interstate I-20 U.S. Interstate I-55 U.S. Highway 80 Mississippi Highway 25 Mississippi Highway 43 2 unnumbered roads	-----
Simpson	Mississippi Highway 28 2 unnumbered roads	-----
Pearl River	U.S. Interstate I-59 Mississippi Highway 26 (La 10) 1 unnumbered road	Southern Railway

4. PREHISTORIC SEQUENCE

The Prehistoric sequence of the Pearl River Basin is divided into three major periods. These are Paleo-Indian, Archaic (or Meso-Indian) and post-Archaic (or Neo-Indian). Figure 4-1 depicts the Pearl River Basin cultural sequence.

4.1 Paleo-Indian Period (10,000 BC - 6000 BC)

The term Paleo-Indian refers to those prehistoric populations which inhabited North America from the end of the Pleistocene era through the early part of the Holocene era. The population during early Paleo-Indian times is generally viewed as consisting of small groups of wide-ranging nomads following herds of megafauna. They lived in temporary campsites and left few traces of their occupation.

As these species of big game became extinct, an economic shift to dependence on local flora and fauna occurred. It is during this time that these nomadic populations became more settled in localized areas. With localization came the first development of diverse cultural patterns, and these are reflected in the late Paleo-Indian artifact assemblages.

Exactly when man first arrived in North America is still quite uncertain. Most archeologists are in agreement that the earliest migrations to the Americas must have been by way of the Bering Strait between Siberia and Alaska - an area referred to as Beringia (Martin and Plog 1973:57).

There have been at least two instances in which the water level of the Bering Strait was low enough to permit overland migration from Asia into North America. According to Fagan (1975:87), this was possible between 50,000 and 40,000 BC and between 27,000 and 8000 BC.

Most archeologists agree that there are no firm data to confirm the presence of man in the New World earlier than 10,000 to 15,000 years before present (BP). However, new evidence suggests a much earlier time frame for man's arrival in North America.

At Old Crow Flats in Alaska, for example, a caribou foreleg bone was uncovered. It had been shaped into a toothed hide scraper or "flesher." Associated with it was a large deposit of cracked/split caribou bones which were radiocarbon dated to about 27,000 BP. (Irving and Harrington 1973).

Radiocarbon dates of 17,000 and 23,000 years have been obtained from skeletal remains in California (Campbell 1979:395), and charcoal from hearths at the Lewisville Site in Texas has been dated in excess of 37,000 BP (Wormington 1957:58-59).

The data base for the Paleo culture of North America is very incomplete. Available data consist of a few habitation sites, a larger

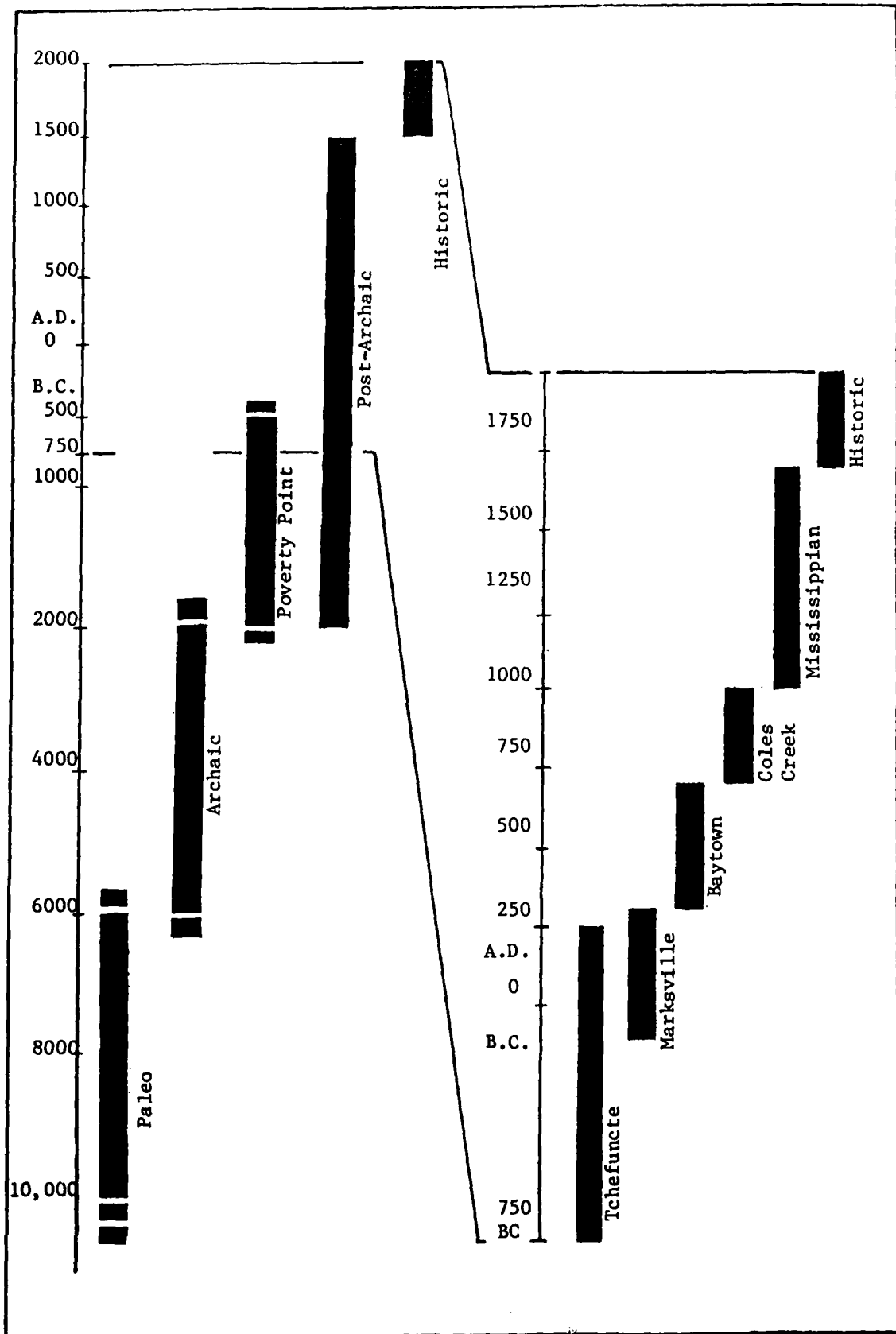


Figure 4-1. Pearl River Basin Cultural Sequence.

number of kill sites and butchering stations, and numerous surface finds on deflated surfaces where they are associated with other artifacts of all ages, and in isolated areas without associations of any kind. According to Willey and Phillips (1958:86), the nature of the evidence has resulted in a one-sided view expressed in the frequent designation "early-hunting cultures."

The scenario which has gained acceptance among the archeological community is one of small bands of hunters and gatherers following herds of big game animals during their seasonal migrations and ranging over a wide area as a result. A lack of contrary evidence, research designs formulated to test alternate hypotheses and scientific techniques for recovering and analysing fragile remains such as plant material and fossil pollen have contributed to the connotation of Paleo-man as a big game hunter.

4.1.1 Western United States

Evidence for the Paleo-Indian period in North America was first obtained from the western part of the United States. Sites such as Folsom (Wormington 1957:230), Lindenmeier (Ibid:31) and Blackwater Draw, locality #1 (Hester 1972) demonstrated for the first time the indisputable association of man and now extinct Pleistocene megafauna in North America. Fluted points and various kinds of stone tools believed to be involved in meat processing activities were found in situ with extinct bison, camel and mammoth.

The Paleo period in the Western United States is typically divided into three cultures - Clovis (Llano), Folsom and Plano. Clovis sites are usually represented by kill and butchering stations involving mammoth (Elephas columbi) and numerous surface finds of the distinctive Clovis fluted point. The apparent hunting strategy employed by Clovis hunters was that of surprise and/or entrapment of their quarry (usually a single animal) in a swamp or bog (Spencer, Jennings et al 1977:17).

One of the most important sites of this period is the Clovis Site, or Blackwater Draw, locality #1 (Hester 1972), in New Mexico. This site not only firmly associated Clovis points with mammoth kills, but also provided a stratigraphic succession of the three Paleo-Indian cultures of the Plains. Other important Clovis sites include Lehner (Hauray 1956) and Naco (Hauray 1953), both in Arizona.

Following Clovis is the Folsom Culture. This period is marked by a fluted point or knife called Folsom and an extensive tool kit. Folsom sites are characterized by an extinct form of bison (Bison antiquus). The hunting strategy in Folsom times had evolved into the trap or surround method involving large numbers of animals as opposed to the single kills of Clovis hunters (Spencer, Jennings, et al 1977:19-20). The implication of this hunting technique is that it involved larger numbers of hunters demanding increased social organization and cooperation.

The Lindenmeier Site in Colorado (Roberts 1935) is considered by some as the most important single source of information concerning the Folsom complex. The remains of at least nine extinct bison were recovered in association with Folsom points and, most importantly, examples of flint tools used in the butchering process (Wormington 1957:31-37). Other Folsom sites include Blackwater Draw, locality #1 (Hester 1972) and the Lubbock Lake Site (Sellards 1952).

The last of the three Paleo cultures of the Western United States is called Plano. During Plano times there emerged a wide variety of projectile point forms such as Plainview, Milnesand, Eden, Scottsbluff, Agate Basin and Hell Gap. This marked increase in point types has been taken by many archeologists to mean an increase in population as well as in subsistence patterns (Dr. Harry Shafer 1981:personal communication). Hunting techniques employed during this period were of the "fall" or "trap" method (Spencer, et al 1977:20-22).

Two Plano sites serve as examples of this lifeway. At Bonfire Shelter in West Texas bison were herded off a cliff to their death (Dibble and Lorrain 1968). At the Olsen-Chubbock Site in Colorado large numbers of bison were stampeded down a steep hill to be trapped in an arroyo (Wheat 1975).

4.1.2 Southeastern United States

Paleo sites have been found over most of North America. According to Willey and Phillips (1958:89), the majority of fluted points appear to come from the Mississippi Valley and the eastern part of the United States.

Because similar tool types have been found in parts of the Eastern United States, a similar lifestyle has been inferred. The Bull Brook Site (Byers 1954) in Massachusetts provides a good example. Fluted points from Bull Brook are virtually identical in workmanship to those found inside the mammoth excavated at the Naco Site (Willey and Phillips 1958:89).

Evidence identifying man as a hunter of Pleistocene megafauna has not been found in the Southeast. The contemporaneity of man with now extinct animals, however, has been possibly confirmed at three sites in Louisiana and Mississippi.

At Avery Island, near the Louisiana Coast, a bipolar flake industry was discovered in deposits about 30 feet below the present ground surface in the same stratum as remains of horse and mastodon. A San Patrice point and an unidentified lanceolate-shape point were also recovered. The deposits were radiocarbon dated to about 9000 BC (Springer 1973:27-28).

Near Natchez, Mississippi a human pelvis was found in association with ground sloth, horse, mastodon, bison and other extinct animals (McGahey 1975:11). Heavy mineralized human bones were recovered from the Mississippi River along with an extinct form of bison. Flourine

analysis revealed that the human and bison bones are between 18,000-22,000 years old (Woody Gagliano 1981: personal communication).

Recent investigations have demonstrated that in the southeastern United States Paleo groups were probably placing more emphasis on the exploitation of regional small game in combination with plant gathering and less dependence on megafauna.

Lithic assemblages of Southeastern Paleo groups are virtually the same as those found on the Great Plains and in the Northeast. Kill sites are rare in the Southeast and some distributional studies have suggested that there was a concentration on river valley resources. These data have been taken by Muller (1978:283-284) to suggest a possible early move by Paleo groups in the Southeast toward the highly efficient gathering economy usually associated with the following Archaic period.

Byrd and Neuman (1978:10) argue that Paleo populations in the Southeast probably were not exclusively, or even primarily, meat eaters. They point out that given the fact that man is basically an omnivore and the fact that fruits, nuts, tubers and berries were available and easily gathered, "it seems reasonable to suppose that some vegetal foods were eaten" (Ibid). They suggest that Paleo-Indian groups in the Mississippi Valley could have followed the pattern so prevalent in other ethnographic examples; that is, that the men were hunters and the gathering of plants could have been an activity of women, young children and aged persons.

Most Paleo sites in the Southeast are limited to scattered projectile points discovered out of context on the surface of plowed fields and other disturbed surfaces. Clovis points represent the oldest recognized Paleo-Indian occupation in the area. Folsom points have not been found. Cumberland points, a type which has been demonstrated to follow Clovis chronologically, are found throughout the Southeast, especially in the Tennessee and Ohio River Valleys (McGahey 1975:11).

Toward the end of the Paleo-Indian period the Dalton Complex emerged in many parts of the Southeast. In some areas, Dalton sites appear to be more widely distributed than Clovis locations (Morse 1973). Muller (1978:285) believes that the Dalton Complex in the Southeast was a development of the earlier Paleo-Indian pattern in response to the particular needs of the Southeastern environment. He also feels that the groups in Dalton times utilized a broad range of animals with a major emphasis on the procurement of deer. A wide variety of plant foods was probably eaten as well (Ibid).

Some of the sites in the Southeast which have produced evidence of the Dalton Culture include the Stanfield-Worley Bluff Shelter in Alabama (DeJarnette, Kurjack, and Cambron 1962), the Brand Site in Northeast Arkansas (Goodyear 1974), the Hawkins Cache (3LW89) in Northwest Arkansas (Morse 1971:9-20), the Lace Place (3P017) in eastern Arkansas (Redfield and Moselage 1970:21-44) and the Garcia Site (16OR34) in southern Louisiana (Gagliano and Saucier 1963).

It has been commonly held by western archeologists that the eastern distribution of the fluted-point tradition represents a belated extension of early western hunting societies which were forced out of the High Plains by the advent of arid conditions in the altithermal period (Willey and Phillips 1958:89). The lack of extinct faunal associations and good dates for eastern fluted-point cultures has given strength to this argument.

4.1.3 Pearl River Basin

Ten sites in the Pearl River Basin have been recorded as having Paleo-Indian components. Three of these are in the study area. These sites are listed in Table 4-1 and their approximate locations are depicted in Figure 4-2. Those sites in the study area are described in Appendix K.

4.2 Archaic Period (6000 BC - 2000 BC)

The Archaic period in the Southeast is not clearly understood by archeologists. In spite of extensive excavation of Archaic sites throughout the Southeast, knowledge of the fundamentals of Archaic subsistence patterns is still lacking (Haag 1978:3). Similarly, the Archaic period is the least known interval in the prehistory of the Lower Mississippi Valley (Brain 1971:23).

The Archaic period was a time of great change. With the end of the Pleistocene, warmer temperatures fostered climatic changes which resulted in different floral and faunal communities and a rise in the level of the sea.

As Pleistocene megafauna gradually became extinct, human subsistence patterns shifted toward a greater dependence on the wide variety of woodland and riverine resources which were available. Settlements became more permanent and the exploitation of diverse resources resulted in specialized artifact assemblages.

An example of this temporal and geographical specificity is seen in the emergence of a greater variety of projectile point forms. According to McGahey (1975:12-13), the increased diversity of projectile point styles manufactured during the Early Archaic is indicative of more regional variation than was characteristic of the Paleo-Indian period. He argues that Paleo-Indian point types are found over much of North America while Early Archaic types are much less widely distributed.

Some archeologists believe that the Archaic period begins with the end of the fluted point tradition. McGahey (Ibid) states that due to the presence of many typologically intermediate forms between Clovis points, for example, and Early Archaic types, such a distinction would be completely arbitrary. He also mentions that the same flaking techniques were practiced entirely throughout the Early Archaic period. Other tools such as knives, scrapers and graters remained virtually unchanged.

TABLE 4-1

PALEO-INDIAN SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
*22Cp516	Two Clovis points, large worked flakes
*22Cp519	Two Plainview-like points, one polished axe
*22Cp520	Two Lanceolate projectile points (basally ground and thinned)
**22Cp530	Two San Patrice points
**22Hi529	One possible Clovis point
**22Ra519	One Lanceolate projectile point
**22Ra520	One Lanceolate projectile point
**22Si507	One Clovis point
**22Si511	Projectile points
**22W1504	Basal section of Lanceolate Paleo point

*In Corridor

**Not in Corridor

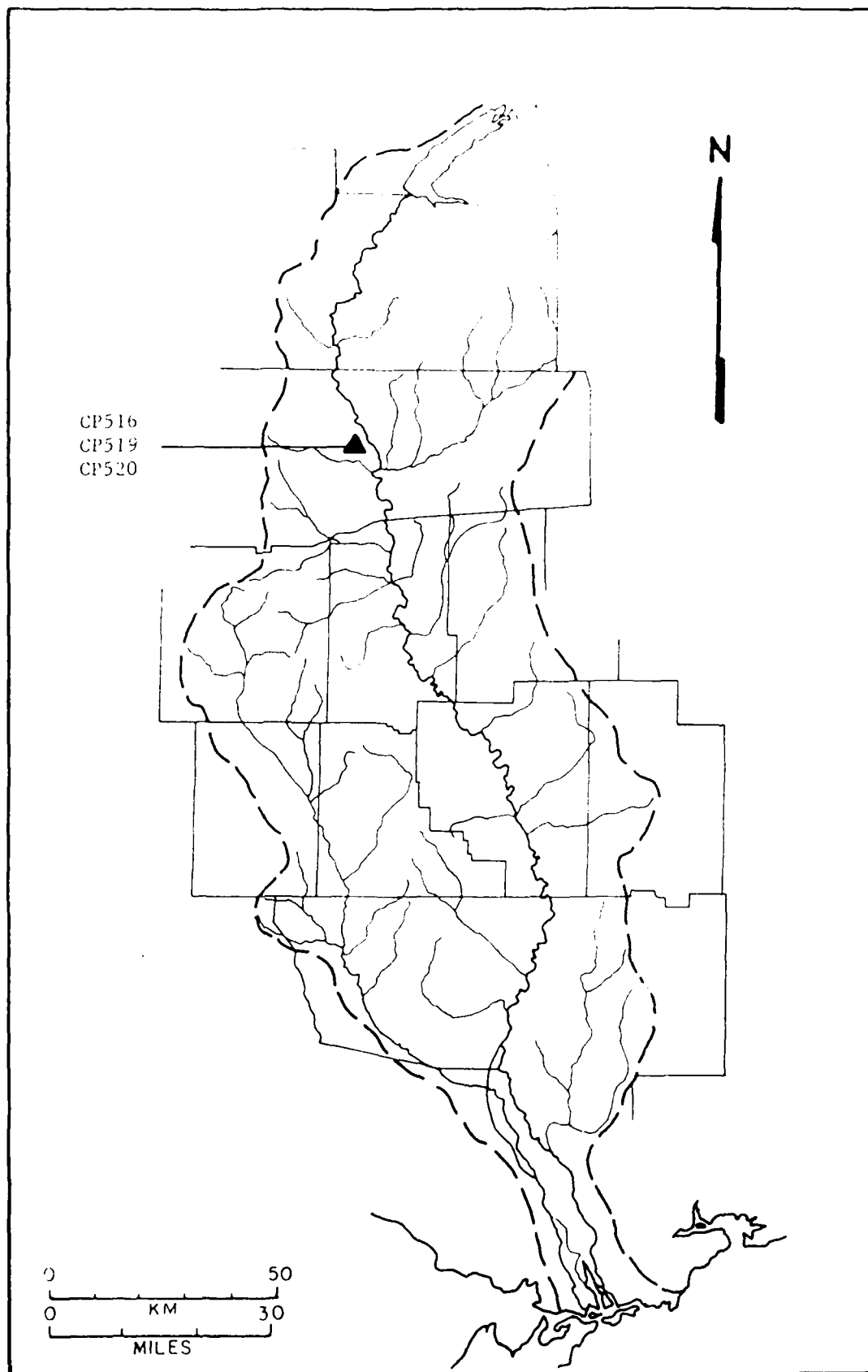


Figure 4-2. Approximate Location of Sites in the Study Area Containing Paleo-Indian Components.

Sites during this period are larger and more numerous which is suggestive of increased populations (Ibid:14). Site locations occur primarily in areas where a diversified, abundant resource base could be exploited by an intensive hunting, gathering and fishing lifestyle (Neitzel and Perry 1978).

Tools during this period changed according to shifts in subsistence patterns. In Mississippi, for example, tools of the Middle Archaic period exhibit little continuity with those from earlier periods (McGahey 1975:13). Projectile points are more crudely made. The deterioration in workmanship is explained by McGahey (Ibid) as evidence of less emphasis on hunting and more on fishing and the gathering of shellfish and wild plants. More nutting and milling stones appeared as well and new tools such as grooved and ground stone axes, suggestive of adaptation to the total environment as well as improved technology appeared. It is during this time that positive evidence of the presence of the atlatl in the Southeast is found (Williams and Stoltman 1965: 679).

Haag (1971:10) believes that the Archaic period was extremely important throughout North America because it formed the basis upon which a great many local or regional variations developed.

4.2.1 Southeastern United States

One of the major traits of the Archaic period was the ability of various groups to adapt successfully to a broad range of local conditions. Because of this, Muller (1978:285-286) argues that it is not surprising to find considerable differences in Archaic period societies from one region to another throughout the Southeast.

Subsistence strategies employed by Archaic populations were probably similar in most cases despite possible differences in technique which particular locations have dictated. The most common lifeway in this period appears to have been seasonal movement designed to exploit available resources such as fruits, nuts, fish and game. According to Muller (Ibid), Archaic groups probably minimized risk by utilizing a wide variety of resources.

Due to a preservation bias, data concerning subsistence are almost nonexistent. Riverine resources were so important to the Archaic diet that Brain (1971) has modified Caldwell's (1958; 1965) definition of "Primary Forest Efficiency" into the concept of "Maximum Riverine Efficiency" in order to describe exploitation of the Lower Mississippi Valley during Archaic times.

One of the major river resources exploited was shellfish. Haag (1971:7) notes that shellfish move slowly but require rapidly moving water for their habitat. They, therefore, accumulate in fresh-water streams, such as rivers. At the Eva Site in Tennessee (Lewis and Lewis 1961), for example, a large shell midden composed of freshwater mussels has demonstrated the importance of this particular resource. The appearance of the bone fishhook during this era is also suggestive of an increased reliance on fish (Byrd and Neuman 1978:10).

Along the coast marine life was also heavily exploited. Shell middens containing the brackish-water clam (Rangia cuneata) and/or the oyster (Ostrea) are common (Neuman 1977:6). According to Richard Marshall (1981:personal communication), Polymesoda carolina is a clam virtually identical to Rangia cuneata and is found in nearly all the same environments. This clam may have been exploited also and should be considered before shell heaps are prematurely identified as consisting of Rangia cuneata. The Graveyard Site (16ST4), near the Louisiana Coast, is an example of a large oyster midden which was occupied during the Late Archaic period (Gagliano 1980:3-8). The great numbers of these shell middens at sites in Coastal Louisiana attest to their importance as a staple in the diet of the regional Indian populations (Neuman 1977:6).

Other, less abundant, molluscan remains commonly found in Indian sites along the Louisiana Coast include the fighting stromb snail (Strombus pugilus), the rock snail (Thais floridana), the pear conch (Busycon perversum), the hard-shell clam (Venus mercenaria) and the freshwater clam (Unio sp.) (McIntire 1958:44-45).

The Indian Knoll Site, a large shell midden in Kentucky, provides additional data concerning Archaic subsistence patterns in the Southeast. Faunal remains from this site revealed that deer was the most intensively exploited animal. Also present were racoon, opossum, dog, groundhog, squirrel, fox, beaver, bear, wildcat, rabbit, skunk, chipmunk, mink, wild turkey, goose, turkey vulture, sandhill crane, box turtle, snapping turtle, drum and other fishes (Webb 1974).

It has been accepted by most archeologists that the consumption of wild plants constituted a major portion of the diet in Archaic times (Brain 1970, 1971; McGahey 1975; Muller 1978). Due to the lack of hard data, plant use is usually inferred from the presence of artifacts such as pestles, mealing stones, or nutting stones present at small, presumably seasonal camps (Byrd and Neuman 1978:11). At the Hester Site in Northeast Mississippi small sandstones, pitted on each side, were consistently associated with Decatur points and were also found with Big Sandy points. Later testing revealed a clear trend for the Decatur component to overlie Big Sandy (Sam McGahey 1981:personal communication).

According to Muller (1978:286-287), the evidence from Archaic period sites throughout the Southeast clearly demonstrates that the population was usually organized into quite small groups or bands. He (Ibid) argues that small bands would have allowed any given group to react quickly to variation in the local availability of any food resource, provided the total population density over the Southeast was fairly low.

As population increased throughout Archaic times, however, increasing pressure would have been placed on those groups with restricted mobility to develop local resources subject to less annual variation. In addition, the efficiency of exchange and distribution of goods as well as improved storage systems would have to be developed (Ibid).

4.2.2 Pearl River Basin

During the Archaic period occupation of the Pearl River Basin increased markedly. A total of 69 archeological sites have been reported as having Archaic components. It should be noted, however, that some of the sites have been placed in this category on the basis of meager evidence. For example, five sites have been labelled Archaic solely on the presence of flakes. An additional five sites are considered Archaic with no justification for this placement. Seven of these sites are in the study area. These sites are listed in Table 4-2 and their approximate locations are depicted in Figure 4-3. Those sites in the study area are described in Appendix K.

Possibly the most notable site of this period in the study area is Cedarland Plantation (22Ha506). Cedarland is situated next to the Claiborne site on a 20-foot-high terrace on the eastern margin of the Pearl River estuary and within sight of the Gulf of Mexico (Webb 1977:25). Figure 4-4 depicts the location of the Cedarland Plantation and Claiborne sites.

The site is a stratified midden, semicircular in shape, and composed of oyster shell and earth. The outer diameter is 175 meters (574 feet) while the inner diameter is 100 meters (328 feet) (Ibid).

Excavation revealed a deeper stratum containing oyster shells and faunal remains of deer, bear, fish, turtle, waterfowl and various small animals. Artifacts were interspersed with remnants of small clay-lined hearths. Black organic sand, containing charcoal, animal bones, a few lumps of clay, artifacts and hearths constituted the upper level (Ibid).

Cedarland Plantation has been designated the type site for the Late Archaic Pearl River Phase by Gagliano (1966). Although many of the artifacts from the site are similar to those found at Claiborne, baked clay objects were not well represented in the artifact sample (Webb 1977:25).

The artifact assemblage at Cedarland includes steatite vessels; microflints made from bipolar blades, chipped to rod form; Gary and Pontchartrain dart point forms; plummets of exotic materials; bannerstones (bipennate, prismatic, and cylindrical); bone and antler objects (awls, flakers, chisel, gorgets, beads and pins); beads (tubular and barrel-shaped); and shell choppers (Ibid:26-27).

Webb (1977:27) believes that the occupation at Cedarland preceeded that of Claiborne. The inhabitants of the Cedarland Plantation site were already using stone vessels, copper and perforated (as well as grooved) plummets. Based on a radiocarbon date from the upper level at Cedarland of 1240 BC and a sample from Claiborne (1150 BC), it has been hypothesized that a shift in occupation from Cedarland to Claiborne occurred about 1200 BC (Gagliano and Webb 1970:69).

TABLE 4-2

ARCHAIC SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
*22Cp516	One Pontchartrain point
*22Cp520	Fire-cracked rock, flakes
*22Cp521	Large, crude, broad-stemmed points
**22Cp531	Projectile points, debitage, adze
*22Ha506	Microliths, projectile points, bannerstones, etc.
**22H1517	Projectile points, flakes
**22H1542	Projectile points, broken pebbles
**22H1552	Projectile points, adze, tubular stone bead
**22H1554	Lithics
**22H1558	Projectile points
**22H1578	Projectile points
**22H1579	Projectile points, bead, adze
**22Lw512	Projectile points
*22Lw514	Dalton points
*22Lw515	Projectile points
**22Ma517	Projectile points, debitage
**22Md520	Projectile points
**22Md598	Projectile point (Pontchartrain), flakes
**22Md602	Projectile points, debitage
**22Md610	Flakes (2)
**22Md611	Bifaces (1), flakes (2)
**22P1503	Projectile points, debitage, drill, stone beads
**22P1511	Tools (2), debitage
**22P1512	Tools, debitage, fire-cracked rock
**22Pr521	Projectile points, burins, flakes
**22Ra516	Not given
**22Ra519	Projectile points, flakes, adze
**22Ra520	Projectile points, flakes, adze
**22Ra521	Projectile points (1), flakes
**22Ra522	Flakes (3)
**22Ra523	Flakes (5)
**22Ra531	Flakes
**22S1507	Projectile points
*22S1510	Projectile points
**22S1511	Not given

TABLE 4-2

ARCHAIC SITES IN THE PEARL RIVER BASIN
(CONTINUED)

SITE	BASIS FOR TEMPORAL PLACEMENT
**22W1502	Projectile points
**22W1503	Projectile points, bifaces, flakes, adzes
**22W1505	Flint knife
**22W1507	Spear point
**22W1511	Projectile points, stone tools
**16WA14	Lithic debitage
**16WA16	Lithic debitage
**16WA17	Lithic debitage
**16WA23	Lithic scatter
**16WA24	Not given
**16WA26	Projectile points, knives, flakes, sandstone fragments
**16WA27	Projectile points, flakes, cores
**16WA28	Projectile points (1), flakes, cores, sandstone fragments
**16WA30	Not given
**16WA31	Projectile points
**16WA32	Flakes
**16WA34	Flakes
**16WA35	Flakes, cores (1)
**16WA37	Projectile points
**16WA39	Cores (2), flakes
**16WA40	Projectile points (1), pebble fragments, flakes
**16WA41	Projectile points (1), cores (1), flakes
**16WA42	Flakes, tools
**16WA44	Projectile point fragments
**16WA46	Tools, flakes
**16WA51	Not given
**16WA58	Cores, tools, flakes
**16WA60	Projectile points (1), tools, flakes
**16WA61	Tools, flakes
**16WA63	Flakes, projectile points, microliths
**16WA66	Projectile points, flakes
**16WA69	Projectile points (1)
**16WA75	Illegible on site form
**16WA78	Projectile points, tools, flakes

*In Corridor

**Not in Corridor

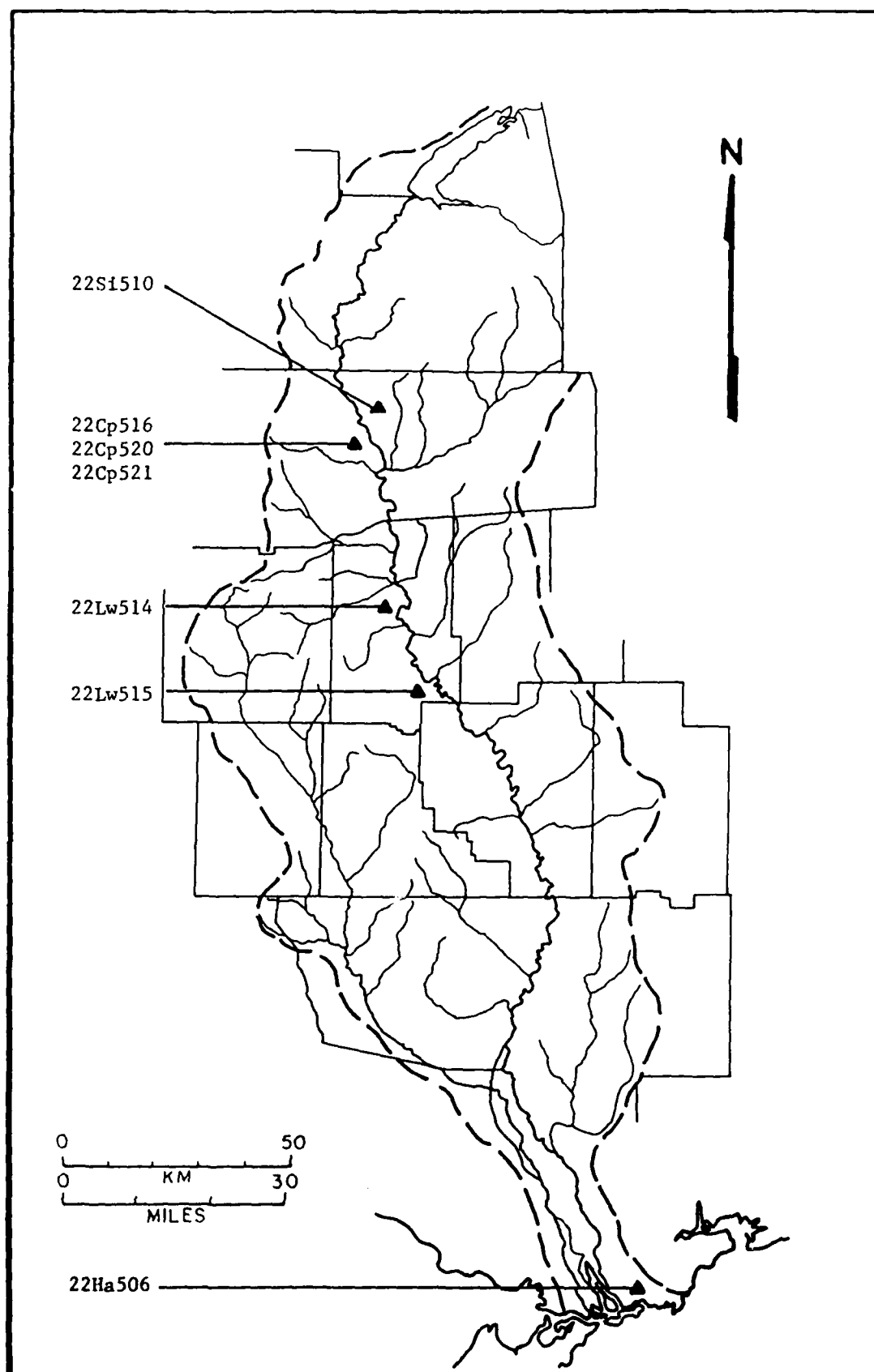


Figure 4-3. Approximate Location of Sites in the Study Area Containing Archaic Components

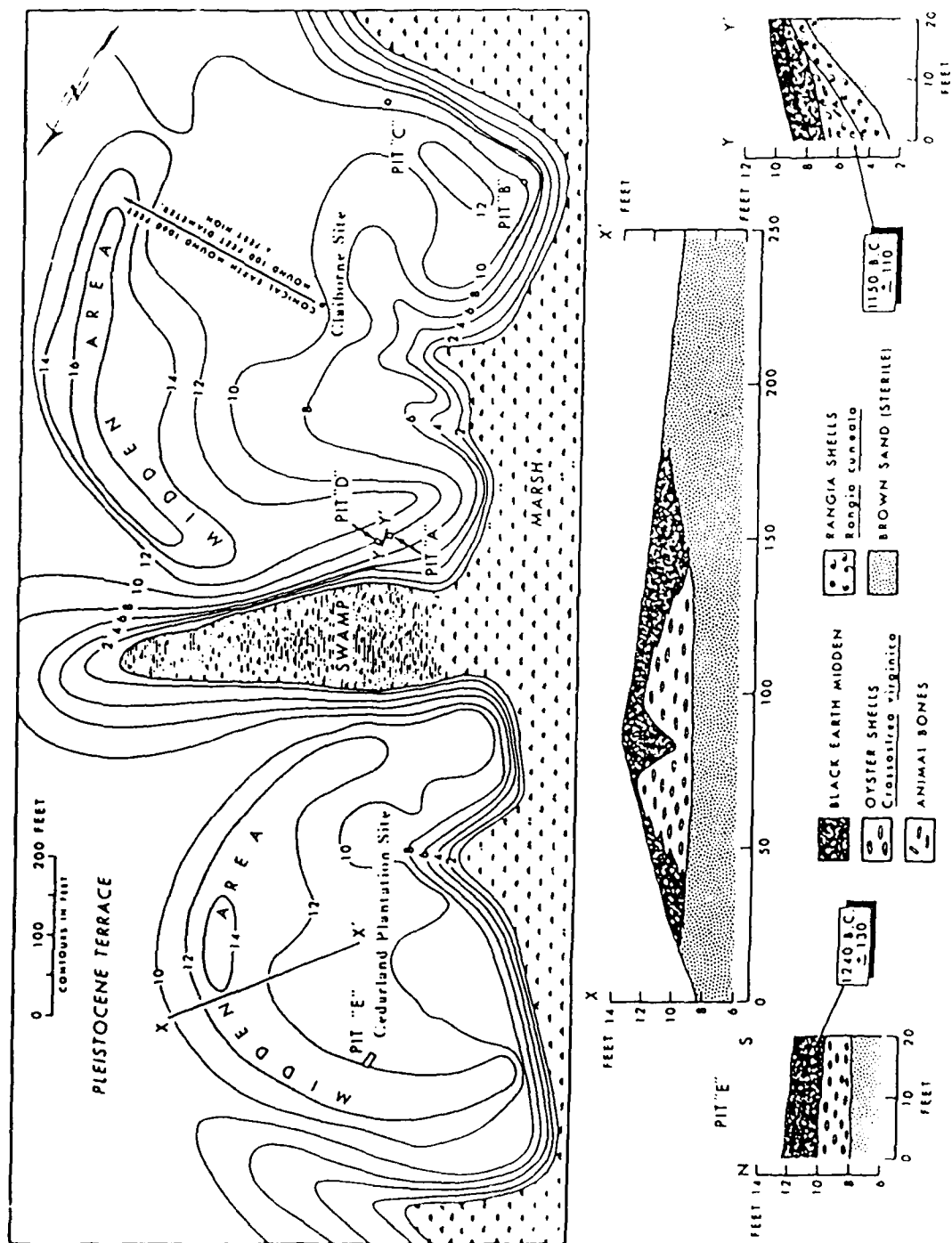


Figure 4-4. Cedarland and Claiborne sites. Subjacent profiles: x - x', cross-section across Cedarland midden; Pit E, Cedarland midden; y - y', profile of pit in Claiborne midden (after Webb 1977, Figure 14).

4.3 Post-Archaic Period (2000 BC - AD 1000)

The onset of the Post-Archaic is generally associated with the appearance of the bow and arrow, pottery making, agriculture and (to a lesser extent) mound building. In many areas these traits did not appear simultaneously. In fact, Haag (1971:9) notes that in the East agriculture was not important until "near the beginning of the Christian Era," while pottery was known as early as 2500 BC.

4.3.1 Poverty Point Period (2000 BC - 500 BC)

Dating and chronological sequences in the Poverty Point period have been established by radiocarbon measurements, thermoluminescence datings, cross-cultural comparisons and geological evidence (Webb 1977:4). A series of 42 radiocarbon dates taken from sites in the Lower Mississippi Valley confirmed the temporal antecedence of Poverty Point culture over the Tchefuncte-Marksville sequence (Ford and Webb 1956). Through the various dating techniques applied to Poverty Point sites it is believed that the Poverty Point culture began on the Gulf Coast and in the Mississippi River Basin by 1700 BC, was fully developed between 1200 and 1000 BC and in a state of decline by 500 BC (Webb 1977:5).

Not all archeologists are in agreement as to whether Poverty Point culture should be classified as Archaic or Post-Archaic. According to McGahey (1975) and Neuman (1977), it belongs to the Archaic period. Gibson (1974b) feels that Poverty Point can best be explained in terms of a transitional role and it is seen as Post-Archaic by Brain (1971), Gagliano (1980), Haag (1978) and Webb (1977).

Diagnostic artifacts of the Poverty Point period include baked clay objects (such as the Poverty Point cooking balls), steatite vessels, plummets, microlithic tools and distinctive dart point types such as Epps, Gary and Motley (Brain 1971:46). Brain (Ibid:47) notes that the presence of "finely-wrought nonutilitarian ornaments" are indicative of a high level of socio-economic development. He speculates that some crude, fiber-tempered pottery did exist in the later stages of the culture but never in significant amounts (Ibid:52).

Webb (1977:Figure 2) recognized six distinct clusters of sites in Arkansas, Louisiana and Mississippi. One group is located along the Gulf Coast involving sites clustering around Claiborne (22Ha501) at the mouth of the Pearl River (Ibid:Figure 6). Other clusters are located around the type site, Poverty Point, on the Macon Ridge and the floodplain east of the Tensas River; around Jaketown in the Yazoo Basin; adjacent to the Ouachita River in north Louisiana and South Arkansas; around Caney Island and Catahoula Lake, in central Louisiana; and around Beau Rivage, west of the Mississippi Delta.

In addition to site clusters, isolated sites have also been recorded. The Wills site (22Ha512), on the Pearl River near Jackson, Mississippi, is an example.

According to Webb (1977:7), most Poverty Point sites are found in four kinds of settings: 1) on terraces of old land masses overlooking major river courses, relict or active; 2) on levees of major river channels, generally relict; 3) at river-lake junctions; and 4) on the Gulf Coast, at estuaries or on old lands in marsh areas.

Webb (Ibid) states that Poverty Point sites were ecologically constant; that is, all sites were placed in contact zones, strategic ecotones that permitted the exploitation of combinations of environments. He also points out that, although there is no evidence of fortifications, major sites were situated so that the terrain provided protection in what Gibson (1974a:20) refers to as "territorial circumscription."

Poverty Point settlement patterns are interpreted by Webb (1977:7) as clusters of small sites situated around larger ones which he believed functioned as regional centers. The presence of exotic materials suggests that Poverty Point and other sites served as trade and redistribution centers (Brain 1971:51; Webb 1977:15).

Brain (1971:50) characterizes the Poverty Point culture as a "phenomenon of the bottomlands." He suggests that the lineal spread of the culture along a north-south axis was not accidental, but rather a response to the demand for exotic materials from distant sources along the riverine system. Wide trade networks existed, and exotic trade goods are characteristic of Poverty Point sites.

The sizes of Poverty Point sites vary greatly, from the type site that covers approximately one square mile to the McCoy site that covers less than a quarter of an acre (Webb 1977:11). Some of the larger sites include Jaketown (150 acres) and Caney Island (40-50 acres). Both are considered to be regional centers. Sites in the intermediate range (8-15 acres) include Claiborne (presumed to be a regional center), a coastal site; Teoc Creek (Ibid), in the Yazoo Basin; Neimeyer-Dare in northern Louisiana; and Pickett's Island in central Louisiana. Many sites are small - less than one or two acres in size. Jacks, Hebe, McCoy and Kinlock in the Yazoo Basin, and Wills on the Pearl River provide examples (Ibid).

The largest and probably most important of all Poverty Point sites is the type site situated on the edge of the Macon Ridge escarpment, an earlier alluvial fan of the Arkansas River in northeast Louisiana. The size of the site, the accompanying earthworks and mounds and the large number of smaller sites surrounding it suggest that it functioned as a center for a regional interaction sphere.

This site is unique in that it is the only one of the period to contain an elaborate system of earthworks and monumental mounds. The village construction consists of six concentric elevated ridges, each forming five-eighths of an octagon, with aisles left at the angles. In addition, two mounds are located outside the earthworks (A third mound, the Motley Mound, is located north of the main site area). There is evidence that construction was rapid according to an integrated plan, and not over a prolonged period of time (Webb 1977:11).

The earthworks are quite large. The diameter of the outer ridge is 1208 meters (3964 feet) while that of the innermost ridge is 594 meters (1950 feet). The total length of ridge construction is approximately 11.2 kilometers (7 miles). The function of these ridges is not known, however, it has been suggested by Gibson (1973) that they would have made defense of the site easier.

The magnitude of the earthworks at the Poverty Point site and the other ceremonial centers suggest that large populations were used to construct them. Byrd and Neuman (1978:11) remark on the disparity of opinion regarding the method of exploitation used to support such a large population. They note that some archeologists have argued that the production of an agricultural surplus of a crop such as corn or squash is the only explanation for the society; others feel that the domestication of native plants could have supported the groups. Still others believe that the efficient exploitation of wild resources would have been adequate to maintain the population.

The presence of the mounds at Poverty Point have been considered by some to have served in a ceremonial or religious capacity. The ramps and platforms of Mound A and Motley Mound are suggestive of gatherings and ceremonies (Webb 1977:13). Ford (1954) suggested that these two mounds represented effigies of seated birds. There is little other evidence of ceremonialism at Poverty Point sites. Small mounds at Jaketown and Neimeyer-Dare, for example, produced basal hearths and clay ball fragments, but no evidence of ceremonialism.

Information concerning houses is virtually nonexistent at Poverty Point sites (Webb 1977:13). A presumed house floor has been found at Poverty Point in the form of a midden 4.24 meters (14 feet) across and 25 centimeters (9.8 inches) thick which contained large amounts of burned daub, baked clay balls and other artifacts. A shallow subfloor pit dug into the sterile soil was filled with charred cane (Ibid:18).

A small, circular post mold pattern was found at Jaketown. An arc of 10 post molds indicated a circular structure about 5.5 meters (18 feet) in diameter. Another structure was represented by an oval outline of post molds about four meters (13 feet) across (Ford, Phillips and Haag 1955:34-36).

No burials have been found at Poverty Point sites, even in coastal areas where faunal remains are well preserved. Cremation is the suspected pattern of disposal but the only charred human bones found so far have been under Mound B at Poverty Point (Webb 1977:14). Burial offerings at Poverty Point have been suggested by the placement of choice objects such as a double row of 40 copper beads, fine projectile points and plummets (Ibid).

A wide variety of data concerning food procurement and preparation have been collected. Cooking activities are indicated by the presence of clay cooking balls associated with earth ovens and masses of fire-cracked pebbles (Webb 1977:14). Containers believed to be associated with food preparation have been found in the form of steatite and sandstone vessel fragments, impressions of basketry on clay in mound fills

and on baked clay objects, and ceramics (fiber-tempered, sand-tempered, clay-tempered, grit-tempered and untempered). Brain (1971:52) believes that the large numbers of steatite bowl sherds and baked clay objects clearly demonstrates that proven methods of food preparation were preferred. Webb (1977:14) states that the mechanism of pottery or stone vessel use is uncertain.

Hunting has been established by the many projectile point forms found at the site and the presence of atlatl weights. Fowling is implied by the numerous plummets (bolas weights?) usually made of heavy hematite and magnetite (Ibid).

Pitted stones, mullers and milling stones suggest nut and seed processing. Soil tillage is evidenced by chipped stone hoes with highly polished bits and dorsal faces (Ibid).

A well-developed lapidary industry was recognized by the presence of beads, pendants and buttons (Ibid:Table 11). The technology of the chipped stone assemblages from Poverty Point is similar to many Late Archaic and Woodland assemblages in the eastern United States. This industry is represented by cores, various bifacial forms, projectile points, adzes, celts, hoes, drills, scrapers, denticulates, graters, gouges and flakes (utilized and unused) (Webb 1977:Table 4). The manufacture of lamellar microflint blades, however, is unique to the site (Ibid:36, 40-41).

Exotic materials at the Poverty Point site are indicative of trade and redistribution (Haag 1978:4; Webb 1977:14-15). Brain (1971:51) believes that exotic raw materials and finished products were brought there for exchange. Trade and redistribution was carried out between Poverty Point and such distant areas as the Great Lakes, the Ohio Valley, the Appalachian foothills, the Gulf Coast and the Ozark mountains of Arkansas, Oklahoma and Missouri (Webb 1977:15).

It has been stated that societies lying toward the center of a group of interacting societies will in most respects change more rapidly than those lying at the margins (Caldwell 1966:338). According to Brain (1971:50-51), the center of interaction in Poverty Point culture was the type site. He says that it is probable that the climax was reached there because that location was at the most central point for utilizing the major mid-continental rivers (Mississippi, Ohio, Arkansas and Red) - that is, at a geographical point where these rivers approached each other most closely at that time (Ibid).

An example of a large Poverty Point site is Jaketown which covers about 150 acres. This site is situated in the flood plain of the Yazoo Basin, on the west bank of Wasp Lake, between the present courses of the Yazoo and Sunflower rivers in Humphreys County, Mississippi. The major occupation is on a semicircular point bar formed within a loop of an ancient major river (possibly the Mississippi-Ohio) (Ford, Phillips and Haag 1955).

Fisk (1944) has estimated that initial occupation by Poverty Point groups occurred circa 1500 BC. Radiocarbon dates by Ford, et al (1955)

produced dates of 450 and 350 BC, while two subsequent dates by Ford and Webb (1956) were 880 and 610 BC.

Jaketown is composed of two separate areas. In the eastern part of the site are six mounds arranged in an arcuate pattern around a plaza. Two of the mounds are Mississippian. The others have been so heavily damaged through highway and railroad construction that only remnants are left (Ford, et al 1955:25-27).

In the western part of the site are seven conical mounds. Six are arranged in a horseshoe pattern and all are surrounded by Poverty Point cultural material. Excavation of the largest of these mounds revealed that it was built during Poverty Point times prior to the introduction of ceramics (Ibid).

Evidence from surface studies and excavations revealed that the initial, longest lasting and most extensive occupation at the site occurred during Poverty Point times (Webb 1977:19). Thin lenses of initial occupation, suggestive of temporary encampments, are overlain by a heavy midden of full Poverty Point occupation, a foot or more in depth. The Poverty Point deposits were covered by lenses of Tchula, Baytown and Mississippian occupations. It was during these periods that the large mounds were constructed (Ibid).

The only definite evidence of structures was recorded at Jaketown. An arc of 10 post molds indicated a circular structure about 5.5 meters (18 feet) in diameter. Another structure was represented by an oval outline of post molds about four meters (13 feet) across (Ibid).

Evidence of food preparation was found in the form of a basin-shaped shallow pit containing ashes, charcoal and baked clay objects. The cylindrical-grooved form was the main type recovered from Jaketown (Webb 1977:30). Mortars, mullers and pitted stones suggested that seed and nut processing was conducted at the site. Hunting activities were demonstrated by the presence of a variety of projectile point types and atlatl weights.

Pottery was lacking in the lower levels, however, fragments of steatite and sandstone vessels were found. Fiber-tempered, sand-tempered and typical Tchefuncte sherds were recovered. It is believed that they belonged to a subsequent occupation (Ibid:19).

The chipped stone assemblage at Jaketown is consistent with that of most other Poverty Point sites. The number of microflints found at Jaketown is rivaled only by the Poverty Point site (Ibid:42). Most of the used blades are classified as "Jaketown perforators," whose distal ends are unaltered and the proximal ends are narrowed by steep bilateral edge flaking (Ibid:41).

The classification of Jaketown as a regional center is based largely on the presence of a number of unusual artifacts and exotic materials. Quartz crystal was used in the manufacture of five projectile points, a cylinder and a plummet. A human effigy tablet of red jasper was found, as well as bannerstones, boatstones and perforated tablets of beautiful

materials. According to Webb (1977:19), the involvement of Jaketown with the Poverty Point center in interaction and redistribution appears to be definite.

The Claiborne site (22Ha501), 8-15 acres, is representative of what Webb (Ibid:11) considers as intermediate in size. The site is located next to Cedarland Plantation (Figure 4-4) on a 20-foot-high terrace on the eastern margin of the Pearl River estuary within sight of the Gulf of Mexico (Ibid:25).

The Claiborne site is represented by a large, semicircular midden with an outer diameter of 214 meters (702 feet) and an inner diameter of 149 meters (489 feet). The midden is composed primarily of black sand and clam shells (Rangia cunneata). Oysters are present in relatively fewer numbers (Ibid).

A small conical mound was located 344 meters (1060 feet) east of the main midden. The mound is 24 meters (79 feet) in diameter and 1.3 meters (4 feet) in height (Webb 1977:25).

The quantity and quality of artifacts at the Claiborne site is much greater than those of all other coastal sites of the same period. Due to a marked similarity of artifacts found at Claiborne and those from Poverty Point, Webb (Ibid:27) designated it as a regional center. He believes that the occupants at Claiborne maintained close contact with Poverty Point and participated fully in its trade network and cultural organization (Ibid). This interaction is evidenced, in part, by the presence of five anthropomorphic clay figurines found at Claiborne (rarely found anywhere else except Poverty Point) and the occurrence of perforated sandy, spheroidal Claiborne-type objects at Poverty Point (Ibid).

Webb (1977:27) believes that Cedarland and Claiborne represent sequent occupations of the same peoples. The Late Archaic occupants of Cedarland were already utilizing stone vessels, copper and perforated (as well as grooved) plummets. The shift from Cedarland to the Claiborne site coincided with the introduction of full Poverty Point traits (Ibid).

A charcoal sample from near the base of the Claiborne midden yielded a date of 1150 BC. Combined with the date from Cedarland of 1240 BC, it has been hypothesized that a shift in occupation from Cedarland to Claiborne occurred about 1200 BC (Gagliano and Webb 1970:69).

There has been no definite evidence of burials at the Claiborne site. However, a recent find at the extreme north end of the midden has been interpreted as a possible burned offering. An area of very dark midden contained fragments of bone pins, decorated bone tubes and white chert projectile points. All of the artifacts evidenced charring or fire spalling after breakage (Ibid:65). A cache of steatite vessels (Webb 1977:14; Lowry 1969b; Gagliano and Webb 1970:59) and matched Motley points found at the site are also indicative of grave offerings.

Cooking activities at Claiborne are represented by an enormous number of clay balls (over 20,000), cooking pits, charcoal (Marshall 1970a, 1970b) and masses of fire-cracked pebbles (Webb 1977:14). Faunal analysis revealed that various species of wildlife were exploited by the inhabitants of the Claiborne site.

Mammal remains include the white-tailed deer (Odocoileus virginianus), dog (Canis familiaris), cottontail rabbit (Sylvilagus floridanus) and other small, unidentifiable bone fragments (Smith 1974:2).

Birds are represented by turkey (Meleagris gallopavo), sandhill crane (Grus canadensis), and several unidentified species (Ibid). Marine resources utilized were identified as gar (Lepisosteus), unidentified species of turtle, clams (Rangia cuneata) and oysters (Ibid).

The extensive working of wood, hides, bone and antler is inferred from a variety of celts, adzes, scrapers and lamellar microlithic tools (Webb 1970: 12). Microflints at Claiborne are Jaketown perforators and blades thrown from angle-platform cores in typical Poverty Point-Jaketown technique (Ibid:26).

Hunting is suggested by a wide variety of projectile point forms. Pontchartrain and Gary types are the predominate types. Fowling is suggested by a large number of atlatl weights and plummets (Gagliano and Webb 1970:63).

Claiborne has more fiber-tempered sherds (200) than any other site in the coastal area. Webb (1977:25) believes that the large sample of this artifact type indicates that this ceramic type reached the Lower Mississippi Valley by spreading along the Gulf Coast through this site.

Other evidences of interaction with distant areas are seen in the presence of pottery types similar to those found in northern Florida (Bullen 1971), the presence of Alabama orthoquartzite and Arkansas novaculite, projectile point forms resembling Florida types (Webb 1977:26) and steatite vessels made from materials obtained from the southern Appalachians (Ibid:35).

The Wills site (22Ha512) exemplifies an isolated Poverty Point site which may be comparable to what Webb (Ibid:22) refers to as a small satellite site. This site lies on slightly elevated land to the north and west of the back waters of the Pearl River near Jackson, Mississippi. The ridge on which the site is located is between two and four meters (6.5-13 feet) above the adjacent swampland (Rands 1958:2). Although the Wills site is not far, in actual distance, from the Mississippi Valley and the Poverty Point site of Jaketown, the environmental break between the alluvial valley of the Mississippi and the "hill" country through which the Pearl River flows is a sharp one (Ibid:1-2). According to Rands (Ibid), this ecological contrast affected populations in Mississippian times, and should be taken into account when considering earlier archeological horizons, such as Poverty Point.

Cultural-bearing deposits vary from 10-70 centimeters (3.9-27.5 inches) in depth with occasional carbon-stained pits sunk into otherwise

sterile sand. (ary stemmed points, flint chips, fire-cracked stones, baked clay objects and fiber-tempered pottery were found in the Poverty Point levels (Ibid:3).

Aside from various amorphous forms, the predominant type of clay object found at the site is what is referred to as biconical plain. This type consists of a sandier paste, is smaller and not as well fired as its counterparts from other Poverty Point sites (Rands 1958:3). These traits could be taken as a reflection of inferior technology. This, in combination with the lack of a larger artifact assemblage, and the atypical uplands location may be suggestive of an earlier manifestation of Poverty Point culture.

Occupation levels at the Wills site range from pre-pottery levels to those containing Tchefuncte sherds. Rands (Ibid:4) believes that this is indicative of a long-term occupation at the site. Due to the presence of Fiber-tempered pottery together with Bayou La Batre ceramics, it has been hypothesized that the strongest cultural affiliations of the Wills site may have been to the east, rather than with the closely adjacent alluvial valley of the Mississippi.

In addition to Claiborne and Wills, five additional sites in the Pearl River Basin have been reported to contain Poverty Point components. These sites are listed in Table 4-3 and their approximate locations are depicted in Figure 4-5. Those sites in the study area are described in Appendix K.

4.3.2 Tchefuncte Period (750 BC - AD 250)

The origin of Tchefuncte culture is not known. According to Haag (1978:5), it probably originated in the Lake Pontchartrain area and diffused slowly northward along the Mississippi Valley. It is possible that its influence extended as far north as Memphis, Tennessee, but certainly no farther. Evidence of the culture has been found as far west as the Texas border.

Economic and settlement patterns of this period remained essentially the same as those of Poverty Point times. Trade and organized exploitation of natural resources (redistribution) remained the major economic pursuit. The spread of Tchefuncte culture, like that of Poverty Point, was primarily along a north-south axis, largely because of the trade of exotic goods obtained from the north via the Mississippi River (Brain 1971:50-53). However, Tchefuncte materials have been reported in the central Tombigbee (Richard Marshall 1981:personal communication).

There is a large amount of disparity concerning dates for the span of this culture. Phillips (1970) places it within the span of about 500 to 100 BC, Neuman (1977) dates the culture in coastal Louisiana between 750 BC and AD 250, McGahey (1975) places it at circa 500-100 BC and Haag (1978) gives no date, although he (Haag 1971) estimates that perhaps five or six centuries were required for the gradual change from the Archaic lifestyles to the Tchefuncte modifications which emphasize the exploitation of coastal resources to be completed.

TABLE 4-3

POVERTY POINT SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
*22Ha501	Poverty point objects
*22H1512	Poverty point objects, fiber-tempered sherds
**22H1542	Not given
**22Jd507	Earthwork
**22W1502	Lithics
**16ST4	Poverty point objects, lithics

*In Corridor

**Not in Corridor

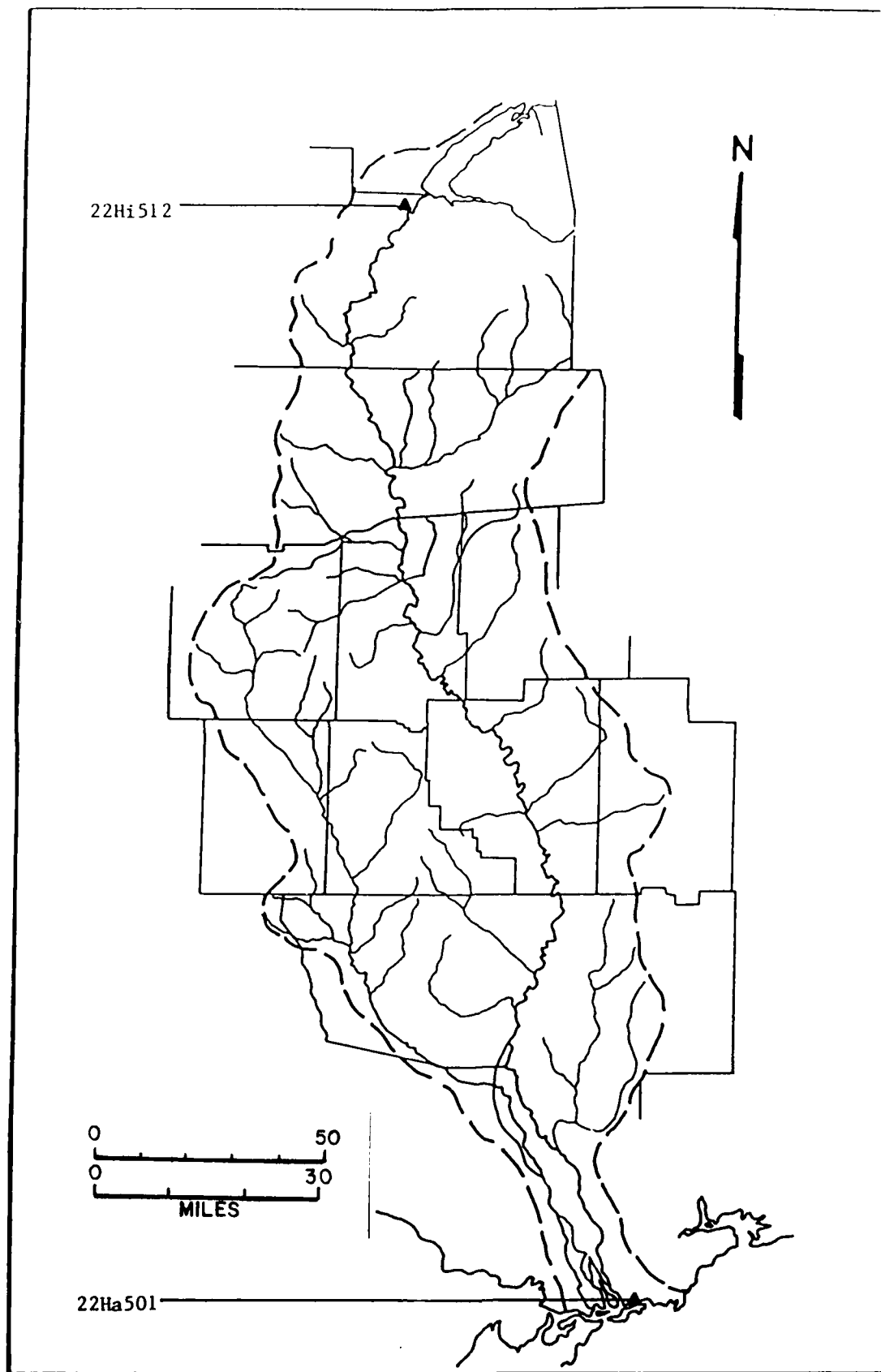


Figure 4-5. Approximate Location of Sites in the Study Area Containing Poverty Point Components.

This period is marked by the first widespread use of pottery, a reduction in the number of stone artifacts and the introduction of earthen burial mounds (Haag 1978:5). The first pottery was simple and not very well made. Later in the period pottery became fairly abundant and is marked by a distinctive set of shapes and decorations (Ford and Quimby 1945:89). Diagnostic pottery features include tetrapodal supports; simple pot and bowl forms; rocker-stamped and punctated-incised decorations consisting mainly of straight lines; and pinched and fingernail-impressed decorations.

Other diagnostic artifacts include socketed antler points, harpoon heads, large socketed bone points and antler atlatl hooks (Ibid:44-45). Projectile forms continued to be mainly the large points held over from the Archaic era.

To the north the culture is referred to as Tchula (Gibson 1968). According to Phillips (1970:876), the absence of easily recognized period markers makes the formation of phase and assignment of components to them particularly difficult for this period.

The closest thing to period markers for the Tchula period is Cormorant Cord Impressed pottery in the north, Tchefuncte types in the south and Alexander or Alexander-like ceramics in both areas. The problem is that it has yet to be demonstrated that these types are the same temporally. According to Haag (1971:15), our knowledge of the Tchefuncte period is confined mainly to information gathered from coastal shell middens.

The culture was first called Tchefuncte by Ford and Willey (1940), who excavated the Crooks Mound Site. This site is a Marksville mound site and contained only a few Tchefuncte artifacts. However, Ford and Willey (Ibid:138) noted a very close typological relationship between the Tchefuncte culture and some of the earlier Marksville remains, leading them to speculate that the site dated slightly earlier than the Marksville type site.

The first description of Tchefuncte culture was provided by Ford and Quimby (1945) who excavated several Tchefuncte sites in south Louisiana. Based on their work (Ibid:87), they suggested that there are three groupings or foci which comprised the Tchefuncte culture.

The first focus is represented by only a single site, the Coppell site on Pecan Island. Although the site lacked pottery, grave goods were included with the burials. Gagliano (1968:12) suggests that this site actually predates the Tchefuncte period.

The second focus is represented by shell middens such as the Tchefuncte site. These sites are differentiated by the presence of shell middens, certain bone and chipped flint projectile points. In coastal middens burials were found in shallow pits; tightly flexed or in bundles. In some cases burials were grouped into burial areas or cemeteries. Human bones were also found mixed with refuse at all midden sites (Ford and Quimby 1945:88).

The third focus is represented by mound sites. Circular mounds and different styles of projectile points are characteristic. Tchefuncte mounds contain well-preserved material (Ibid).

It is uncertain whether or not simple horticulture played a role in the subsistence of Tchefuncte peoples. It is clear that hunting and the exploitation of shellfish were economic activities of major importance. According to Ford and Quimby (1945), deer was the most common animal species exploited during Tchefuncte times. Springer (1973:33) says that this situation may not be applicable to coastal sites where marine resources might have played a role equal to or greater than deer. Byrd (1974) documented the presence of a possible native cultigen, knotweed, and of squash at the Morton Shell Mound, a Tchefuncte site in Iberia Parish. She (Ibid) also found evidence of the use of several wild plants, including hickory nuts, walnuts, acorns, persimmons and wild grapes.

Not much information is available concerning houses during Tchefuncte times. According to Neuman (1977:16), Tchefuncte houses were apparently built in an oval pattern from small poles. A small, circular house pattern was found at Jaketown (Sam McGahey 1981:personal communication).

The period seems to represent a time of "fall back" between the Poverty Point culture and the arrival of Marksville traits from the Illinois and Ohio Hopewellian centers to the north. As the Tchefuncte culture diffused northward, it seems to have blended with Marksville traits. This blend is reflected mainly in pottery types.

Haag (1971:16) considers the Tchefuncte culture to be a coastal outgrowth of the Archaic which gradually spread up the Mississippi River Valley and its tributaries. However, Toth (1977:48) notes that there is an almost total absence of Tchefuncte sites along the Mississippi River and its major tributaries. He (Ibid:50) hypothesizes that Tchefuncte is a culture manifested in "slack water" environments and notes that the distribution of sites is "remarkably coincident" with slow-moving secondary streams and lakes. Toth feels that a possible reason for few Tchefuncte sites being located during normal surveys is the general tendency for surveyors to concentrate on higher alluvial ridges and to conduct more cursory surveys in the wetter bottomlands. He feels that if surveys concentrated on bottomlands areas, "it can be predicted that such a research orientation would result in a significant increase in Tchefuncte sites."

He (Ibid:51) notes that it would have been necessary to abandon such sites each year during the time of high water; this leads to what he terms the second attribute of the Tchefuncte settlement pattern: a tendency for site location toward the edges of the alluvial valley away from the Mississippi River and near uplands or elevated stretches of dissected older alluvium.

A total of 11 sites in the Pearl River Basin have been recorded as having Tchefuncte components. Four of these are in the study area. These sites are listed in Table 4-4 and their approximate locations are depicted in Figure 4-6. Those sites in the study area are described in Appendix K.

4.3.3 Marksville Period (100 BC - AD 300)

The Marksville period spans the years between 100 BC and AD 300. However, Haag (1971:17) speculates that the Tchefuncte culture survived in coastal areas "long after the later Marksville culture was fully developed at the type site." Neuman (1977:6) suggests a span of AD 250 to AD 700 for the Louisiana coast.

According to Haag (1978:5), the Marksville culture originated in the Ohio River Valley and spread southward. It is considered by Haag (1971) as the regional manifestation of the Hopewellian culture as it diffused southward from Ohio and Illinois. The period, named for the Marksville Site in Avoyelles Parish, Louisiana, is characterized by the introduction of very fine pottery, well-made projectile points that appear to have been manufactured primarily for use as grave goods (Ibid:17) and elaborate ceremonialism (Haag 1978:6).

In the absence of detailed information concerning the structure and content of Marksville sites, it is difficult to draw any conclusions concerning settlement patterns of this period. Gagliano (1980:3-130 presents three models which he believes to be representative of the period.

- 1) Major villages on the natural levees and/or terrace margins, summer shellfish collecting camps around Lake Pontchartrain and Lake Maurepas, and hunting camps on the Prairie Terrace. This model would predict that some sites would have been inhabited by at least some members of the population year around, probably by most people in the winter months when foods were least available. Small parties of women, young people, or adult men would spend 2 to 3 weeks at shellfish collecting, hunting, or gathering camps at various times throughout the year.
- 2) A pattern of seasonal transhumance, with each social group spending half the year at one of 2 villages.
- 3) No permanent villages, merely a series of constantly shifting camps.

Marksville pottery includes grog and sand and grit wares. Diagnostic pottery types include Marksville Stamped, Marksville Incised and Churupa Punctated. The cross-hatched rim is an important criterion in the recognition of Marksville pottery (Ibid:19). According to Haag (1978:6), ceremonial pottery, presumably utilized as containers for burial offerings, is one of the most outstanding innovations of the Marksville culture. Few artifacts, other than pottery, are distinctively Marksville (Ibid).

TABLE 4-4

TCHEFUNCTE SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
*22Ha501	Ceramics, lithics
*22Ha504	Ceramics
**22Ha511	Ceramics, bundle burial
**22Ha512	Ceramics
**22Ha513	Ceramics
**22Ha514	Ceramics
*22Ha515	Ceramics, radiocarbon dates
*22Hi512	Ceramics
**22Md520	Mound, ceramics, lithics
**16WA11	Ceramics, lithics
**16WA63	Lithics

*In Corridor

**Not in Corridor

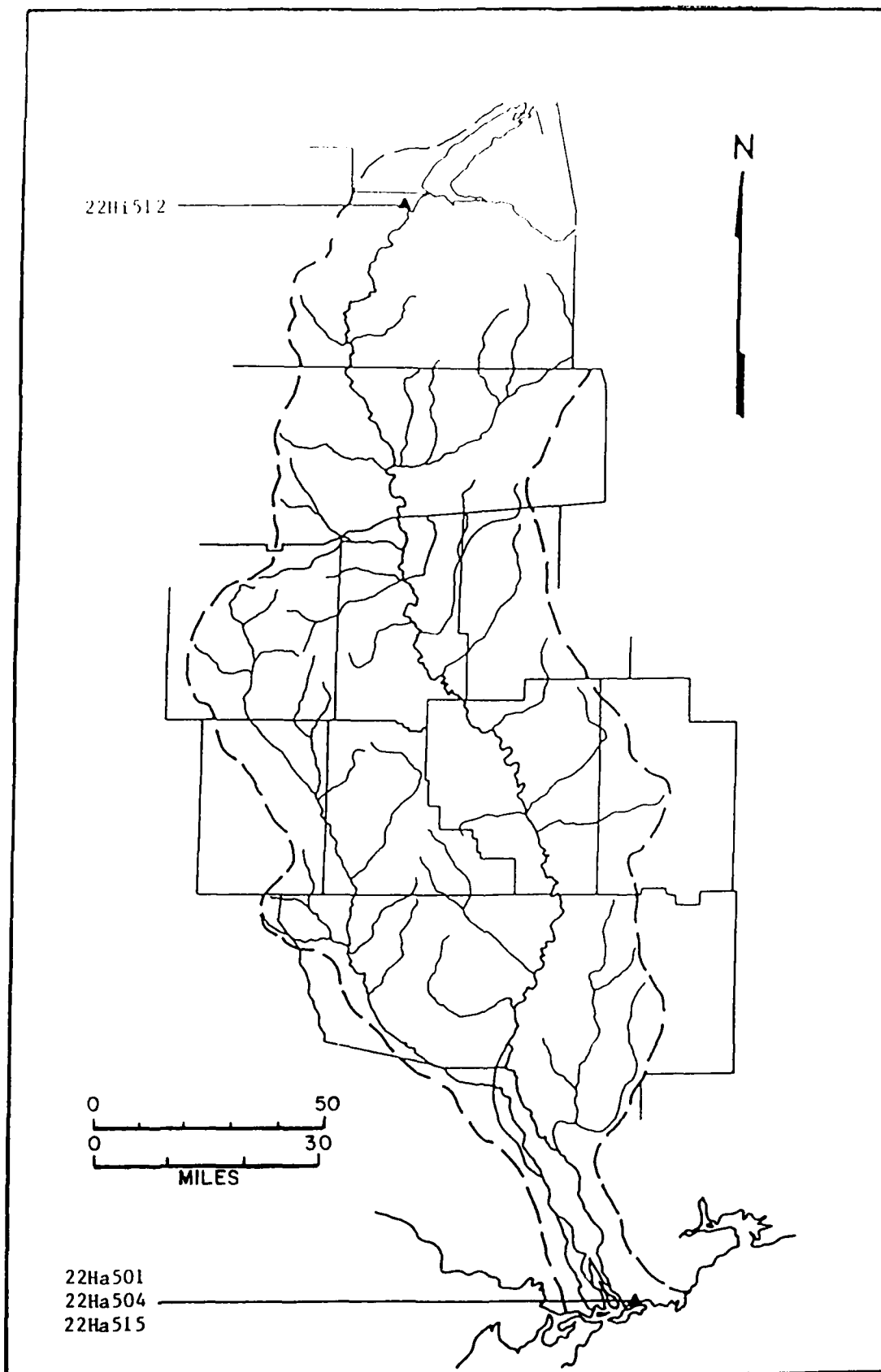


Figure 4-6. Approximate Location of Sites in the Study Area Containing Tchefuncte Components.

There are no projectile point types that are unique to the Marksville culture. Gary and Ellis dart point forms, present during Tchepunkte times, continue to be common throughout the Marksville period (Ibid). Lithic reduction techniques from the Poverty Point period, such as lamellar flaking, were also retained (Neitzel and Perry 1978).

Although large, conical burial mounds were built during this time, their size is not comparable with those of the Hopewellian and Adena cultures proper in Ohio. Indeed, Neitzel and Perry (Ibid:108) note that the size of burial mounds tends to decrease with distance from the Hopewellian center with only a few notable exceptions.

The construction of burial mounds (some cremations are also present), along with the manufacture of elaborate burial furniture, would tend to typify the Marksville culture as a death cult. In fact, some burials are accompanied by disarticulated skeletal parts such as mandibles or skulls which have been perforated or cut (Haag 1971:18).

Marksville burials were typically placed deep in the center of the mound. Most of the interments consisted of a pit dug in the ground. The bodies were placed in the pit which was covered with poles and a pile of dirt erected over the structure. At the Marksville site the burial mounds were enclosed by an earthen wall which presumably functioned as a means of separating the burial area (which may have been considered sacred) from the rest of the village (Haag 1978:6).

Boatstones, ornaments made in the forms of animals from slate and coal and "monitor pipes" which were made of stone and shaped like an animal were introduced during this time (Ibid:19).

Evidence concerning house types during this period is minimal. At least two examples of pithouse construction have been discovered at the Marksville site which are about 1 to 1.5 meters (3.3-4.9 feet) deep. Haag (Ibid) believes that they may have been roofed and finished with siding. According to Neitzel and Perry (1978:108), houses built during this period appear to have been circular, covered with earth and fairly permanent.

Hunting and fishing continued to be important economic activities, although the presence of squash and corn remains recovered from the type site are suggestive of the beginnings of agriculture (Fowke 1927; Byrd and Neuman 1978:16). Haag (1978:6) believes that there is not enough evidence to support an hypothesis that corn had become a true staple in Marksville times. He believes that it was probably a dietary supplement.

Marksville culture ended about the same time that the Hopewell of the Ohio Valley and Illinois terminated. Neitzel and Perry (1978) suggest that the "profound and far-reaching effect" of the culture was due not only to the strength of the Hopewellian culture, but also to the local state of receptiveness to its traits.

A total of 11 sites in the Pearl River Basin have been recorded as having Marksville components. Only two of these sites (22Ha504 and

22Ha515) are in the study area. These sites are listed in Table 4-5 and their approximate locations are depicted in Figure 4-7. Those sites in the study area are described in Appendix K.

4.3.4 Baytown Period (AD 300- AD 700)

The Baytown period is an indistinct period of transition between the decline of the Marksville culture and the later emergence of Coles Creek. Brain (1971:58) states that this period is the least understood in the entire Neo-Indian (Post-Archaic) period, yet in economic terms it was potentially the most significant. He (Ibid:59) views it as one of solid achievement and at least a modest flourescence.

Although the Baytown period is often interpreted as a time of decline (Brain Ibid; McGahey 1975:17), important advances did occur. Arrow points occurring for the first time, indicate the introduction of the bow (replacing the atlatl) and maize cultivation also probably commenced in this period (Brain 1971; Haag 1978).

Use of the bow and arrow is evidenced by the presence of small, thin projectile points (Haag 1978), such as the Collins type, which are believed to have functioned as arrowheads. The bow is seen as representative of a major technological achievement capable of greatly increasing the hunting capacity of small groups of men (Ibid) and bringing about economic revolution (Brain 1971:61). This means that even though there may not have been a population increase during Baytown times, the culture itself had an increased chance of survival because the hunter could augment the food supply with much less effort (Ibid).

The bow and arrow probably did not signal the end of the atlatl completely. Gary and Ellis points suggest that it was still used. According to McGahey (1975:17), there are no examples of outstanding lithic manufacture during this period.

There is virtually no evidence in the form of plant remains for the presence of agriculture during this period (Brain 1971:60), although corn has been recovered from the Hoecake site in Missouri (Williams 1974). According to Brain (1971:60), the case for agriculture can be demonstrated through the artifact assemblages at Baytown period sites. He states that the larger size and jar shape of many Baytown vessels suggests their use as storage containers for grains or seeds. A stone tool inventory, which includes many implements which could have been used for cultivation, a variety of grinding stones and shell hoes are considered by Brain (Ibid) to provide the strongest case for plant domestication.

McGahey (1975:17) feels that there is not enough evidence to demonstrate the presence of agriculture and believes subsistence was still based primarily on hunting and gathering. The importance of wild plants has been shown. Several sites in the Yazoo Basin, for example, have yielded large quantities of animal bones, charred nuts and seeds of wild plants (Ibid). At Baytown period sites in Arkansas, Mississippi and Missouri, plant remains of pecan (C. illinoensis), walnut (Juglans

TABLE 4-5

MARKSVILLE SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
**22Cp518	Mounds, ceramics, burials, copper ear disks
*22Ha504	Ceramics
**22Ha511	Ceramics, bundle burial
*22Ha512	Ceramics
**22Ha514	Ceramics
*22Ha515	Ceramics
**22Md520	Mound, ceramics, lithics
**22Ra516	Ceramics
**22Ra519	Ceramics
**22Ra520	Ceramics
**16WA30	Not given

*In Corridor

**Not in Corridor

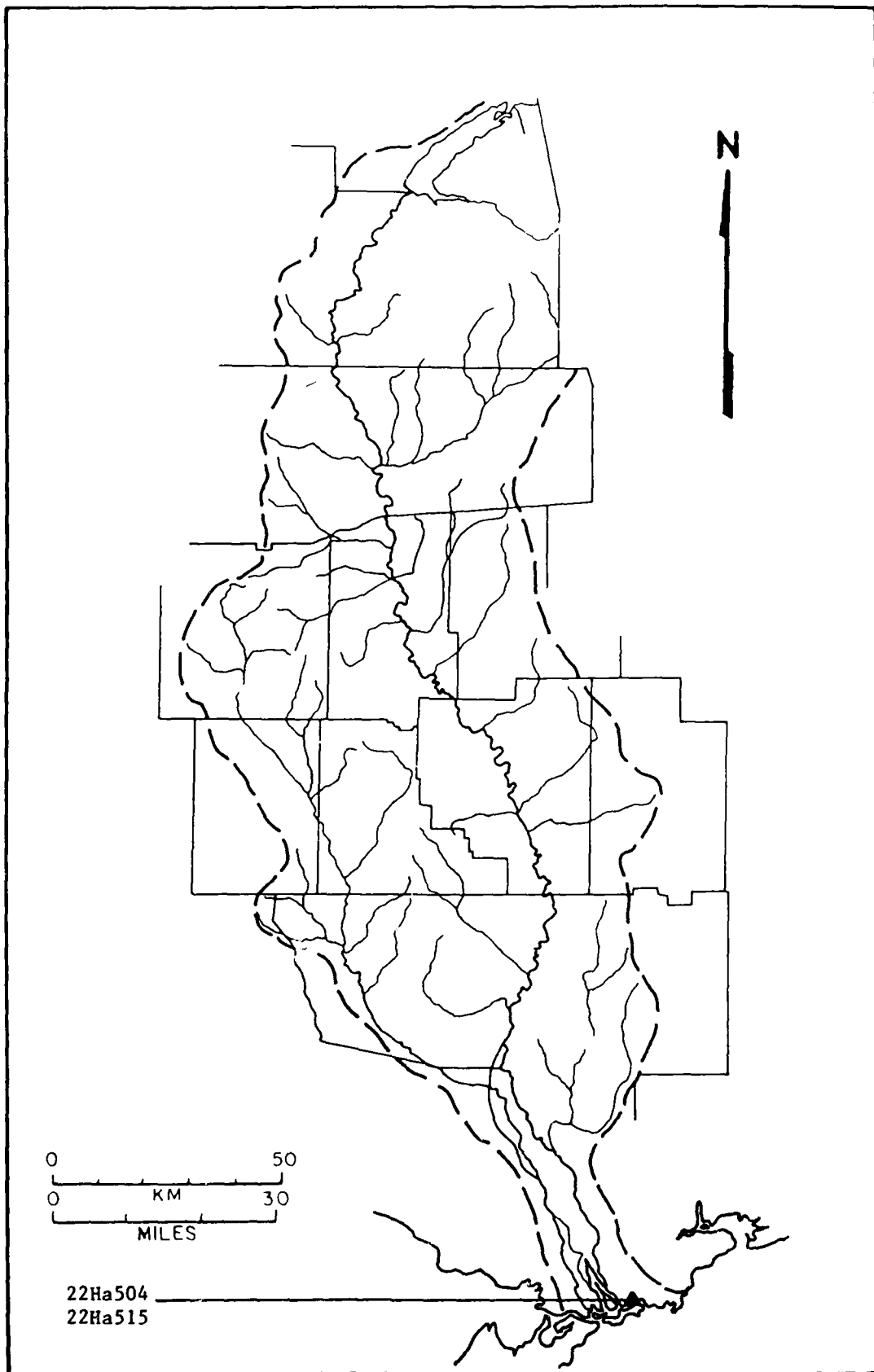


Figure 4-7. Approximate Location of Sites in the Study Area Containing Marksville Components.

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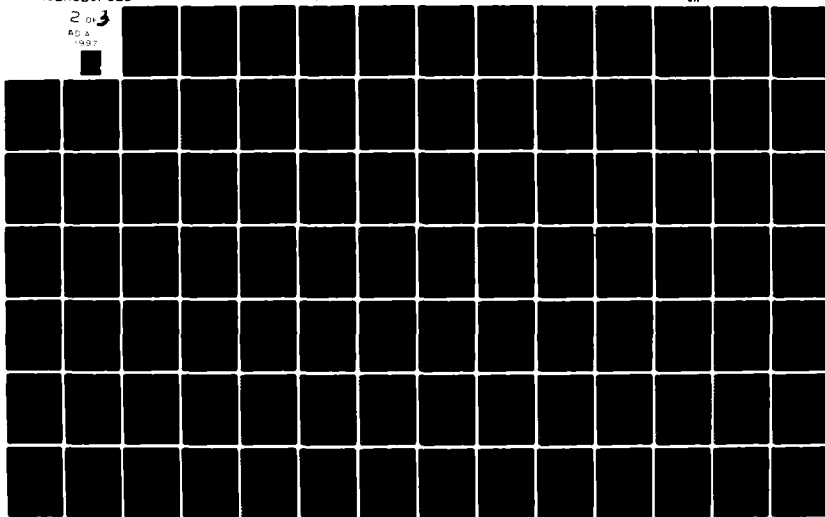
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sp.), acorn (*Quercus* sp.), persimmon (*Diospyros virginiana*), wild bean, knotweed (Cutler and Blake 1970), grape (*Vitis* sp.) (Williams 1974), hickory (*Carya* sp.) and honey locust (Figley 1968) have been recovered.

The burial mounds and earthworks of the Marksville period are lacking during the Baytown period. Village sites are marked by oval or crescentic-shaped middens at either end of an oval plaza. Later in the period flat-topped house mounds built over the middens made their appearances. Excavation of midden deposits has indicated that these were frequently sealed with thin layers of clean, sterile clay, possibly as a sanitary measure (Neitzel and Perry 1978). Human burials are generally extended and placed within the midden deposits. Dog burials have also been reported.

The Whitehall Phase is identified by Phillips (1970:Figure 445) as the only Baytown phase in the study area. According to him (Ibid: 911-912), it is a phase of "widely dispersed sites that have yielded a combination of pottery types assumed without proof to indicate occupation in a period called Troyville by Delta archeologists." The only site of this phase in the study area, according to Phillips (Ibid:Figure 445), is Mulatto Bayou (22Ha500).

A total of eight sites in the Pearl River Basin have been recorded as having Baytown components. Three sites (22Cp516, 22Cp524 and 22Ha500) are in the study area. These sites are listed in Table 4-6 and their approximate locations are depicted in Figure 4-8. Those sites in the study area are described in Appendix K.

4.3.5 Coles Creek Period (AD 700 - AD 1000)

Phillips (1970:18) characterizes this period as "beginning with the emergence of Coles Creek in the southern part of the Lower Mississippi Valley and ending with the establishment of full blown Mississippian culture in the northern part." He believes that Coles Creek culture developed in the southern part of the Lower Mississippi Valley and diffused northward into the area where the Baytown culture persisted. It became perhaps the most widespread culture in Louisiana. Generally accepted dates for the period span the years AD 700-1000.

There was both a geographic and numerical expansion of the population during Coles Creek times. This is no doubt related to a more secure economy based on the increased production of maize (Haag 1978:7). Flint maize was introduced into the area from the east and planted along with beans. Fields were not abandoned so often and fields abandoned earlier could be recovered by the planting of a different crop (Neitzel and Perry 1978:117). The bow and arrow, introduced during the preceding Baytown period, was rapidly integrated into the hunting and warfare patterns of Coles Creek populations (Ibid).

Coles Creek sites include both oval and pyramidal mounds. Apparently pyramidal mounds are a late development. Pure Coles Creek components are difficult to isolate but the earliest assemblages include

TABLE 4-6

BAYTOWN SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
*22Cp516	Ceramics (1 sherd)
**22Cp518	Mounds, ceramics, burials, copper ear disks
*22Cp524	Mound
*22Ha500	Ceramics
**22Md514	Lithics, ceramics
**22Ra511	Ceramics
**22Ra514	Ceramics (1 sherd)
**16ST6	Mound, ceramics, burials

*In Corridor

**Not in Corridor

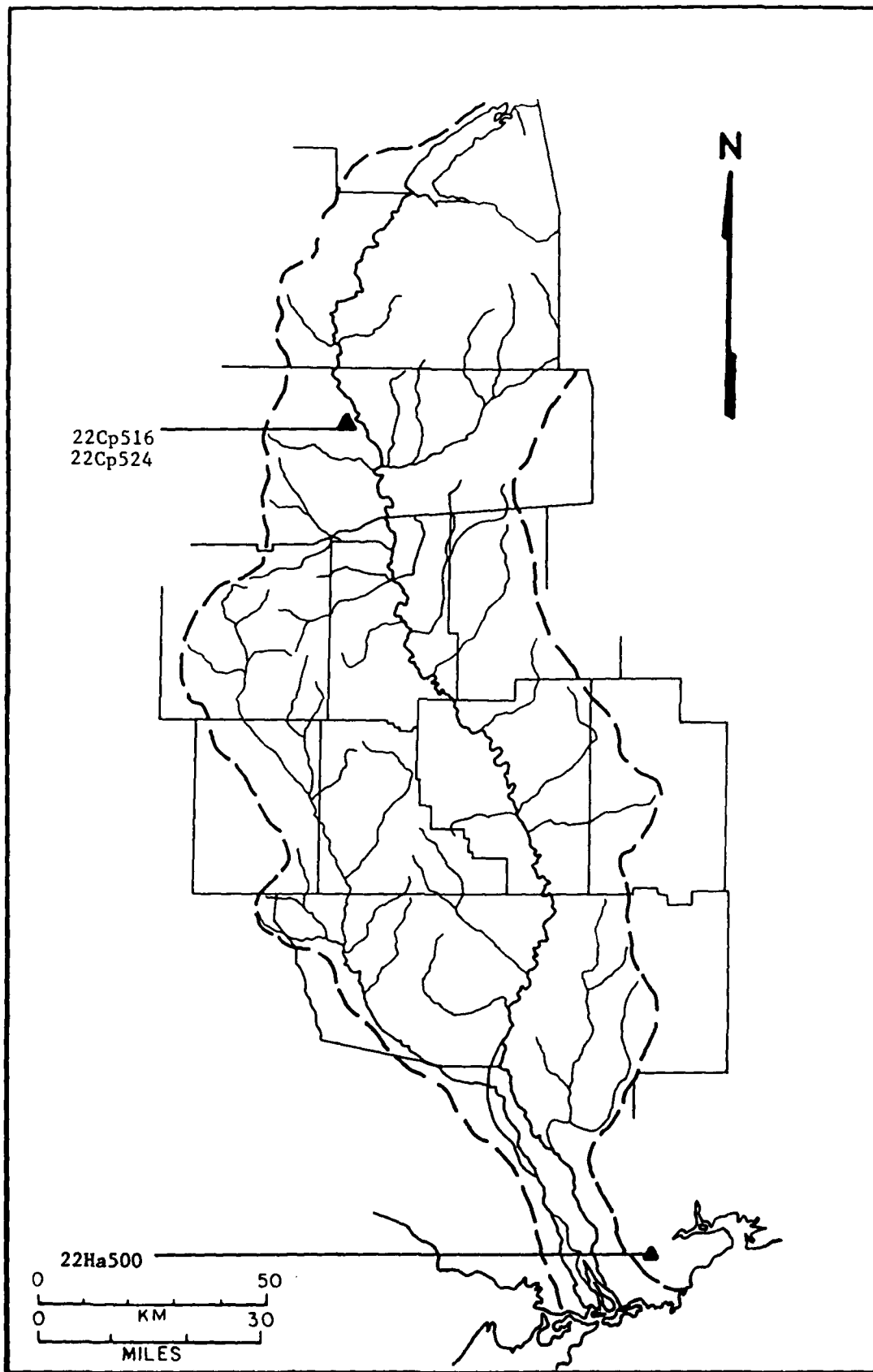


Figure 4-8. Approximate Location of Sites in the Study Area Containing Baytown Components.

distinctive pottery (incised and punctated types), Gary dart points and Alba and Scallorn arrow points (Brain 1971).

A typical Coles Creek site consists of two or three pyramidal mounds arranged around a plaza. Most of the mounds constructed during this period were from four to seven meters (13-23 feet) in height. They were built in stages (sometimes as many as 20 successive buildings represented in a single mound) (Haag 1978:7).

The function of the mounds is not yet fully understood but it is assumed to have been ceremonial because they served as the bases of temples (McGahey 1975:18). Although these structures were not elaborate (built of poles, the walls enclosed with mud and roofed with grass thatch), it has been assumed by some researchers (Haag 1978:7; McGahey 1975:18) that the impetus for this concept originated in Mesoamerica.

The new mound-building activity is suggestive of significant changes in the culture. Burial of the dead no longer assumed great importance. Some burials were placed in temple mounds but they were carelessly interred and rarely accompanied by grave furniture (McGahey Ibid). Williams (1963) believes that the mounds were not constructed for burial purposes.

The construction features of these mounds and their location in groups, with a village midden nearby, suggest to Haag (1978:7) that living took place near the site as well as a strong commitment to religious convictions. The fact that the dirt used in mound construction was obtained nearby is indicative that they were the result of community efforts (Ibid).

Another innovation during this time is the introduction of a new series of pottery types. According to Haag (Ibid), ceramics associated with this period appear to be related to examples in northwest Florida. He mentions that there are no known Middle American pottery types which closely resemble the Coles Creek assemblage. On the basis of pottery, it has been hypothesized that the Coles Creek culture enjoyed a much wider distribution than Baytown. It is found as far north as the upper reaches of the Lower Mississippi Valley and as far west as Texas and Oklahoma (Ibid).

Haag (1971:25) notes that some houses constructed during this time were round. The walls were made by erecting poles from three to six inches (7.6-15.2 centimeters) in diameter. Haag (1978:7) mentions that large, rectangular house types with large settlement groups became the dominate pattern later in the period.

Toward the end of the period the culture reached its maximum distribution. Despite the wide-spread influences in other areas of the country, it is still viewed as a culture characteristic to the lower half of the Lower Mississippi Valley (Ibid).

The Bayou Cutler phase has been identified by Phillips (1970:Figure 446) as belonging to the Coles Creek period. The term Bayou Cutler was first used by Kniffen (1936). Phillips (1970:920) views the phase as

"mostly, if not entirely, within the Coles Creek period." Diagnostic ceramics include: Pontchartrain Check Stamped, Coles Creek Incised, French Fork Incised, Mazique Incised, Rhinehart Punctated, Chase Incised, Chevalier Stamped and Beldeau Incised. The geographical range of this phase includes most of south Louisiana. Phillips believes that it will eventually be subdivided.

Along the coast, the Coles Creek settlement pattern is similar to that of the preceeding Baytown period (Springer 1973:35). Coastal Coles Creek sites consist primarily of shell middens, shell ridges and beach deposits. Only a few of these sites are accompanied by earth mounds. With the exception of one, Bayou des Oies, all have later occupations to which the mounds may pertain. These coastal sites, therefore, appear to lack the "temple mounds" of the more northerly Coles Creek sites (Phillips 1970:922). No Coles Creek sites in the study area are depicted on Phillips (Ibid:Figure 446) map.

A total of three sites in the Pearl River Basin have been recorded as having Coles Creek components. None is in the study area. These sites are listed in Table 4-7.

4.3.6 Mississippian Period (AD 1000 - AD 1700)

The Mississippian period, the last major prehistoric culture in North America, is considered by McGahey (1975:18) to represent the highest prehistoric civilization in eastern North America and possibly the entire continent. It has been identified by others (Griffin 1967; Mosenfelder 1975) as the greatest sociopolitical and economic elaboration that occurred during the later prehistory of the eastern United States. According to McGahey (1975:18), it had a wider influence on the state of Mississippi than any other archeological culture.

The Mississippian developed along the northern reaches of the Mississippi River. The culture spans the time from about AD 1000 to European contact. In the Upper Mississippi Valley elements survived to the beginning of the nineteenth century (Haag 1978:7). Although sites of this period have been found throughout Mississippi, the majority of sites recorded so far are concentrated in the fertile Yazoo Basin. According to McGahey (1975:19-21), this area was ideal for their agricultural economy.

According to Brain (1971:74), the classic Mississippian marker was its pottery. The advent of shell tempering allowed the fabrication of larger containers. Vessel shapes such as bottles, plates and jars are diagnostic of the period. Other characteristic artifacts include a number of chipped and ground stone artifacts such as triangular and leaf-shaped arrow points, including Madison, Cahokia and Nodena types (Ibid:Figure 13, d-e).

Other traits of this period included an apparent revival of respect for the dead who were often carefully buried and accompanied by rich grave offerings (Ibid). Ceramics found in Mississippian graves, for

TABLE 4-7

COLES CREEK SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
**22H1516	Mound, ceramics
**16WA6	Ceramics
**16WA25	Ceramics, lithics

**Not in Corridor

example, are considered by some as perhaps the most outstanding art work of North America. Many of the vessels were painted, usually in combinations of red, white, black and buff. Realistic anthropomorphic and zoomorphic effigy vessels are common. Also, exotic trade materials were used as grave furniture (McGahey 1975:21). The more important people were placed in pyramidal mounds and often accompanied by unusually rich offerings (Brain 1971:74).

A major part of the culture was the extensive practice of agriculture which supplied the major portion of food consumed. Large surpluses made possible the construction of large mounds, fortifications and the ability to wage war instead of small-scale raids. With a predictable food source; the concentration of people into towns and cities was now possible (McGahey 1975:18-19).

Another distinctive feature of Mississippian times was building construction. According to Brain (1971), the basic building was rectangular in form and constructed of wattle-and-daub. Houses were being erected on small mounds reflecting a change in settlement pattern (Brain Ibid:75). Nash (1968) views this as the introduction of a new functional type of mound which he terms "domiciliary."

The combination of traits such as status burials, large-scale agriculture and massive mound construction, suggests that Mississippian society was less egalitarian than in previous cultures. It is also reflective of certain individuals possessing power and control over others (McGahey 1975:21).

By AD 1200, the Mississippian culture was well established in the northern region of the Lower Mississippi Valley, and several regional phases were flourishing. These centers appear to have acted as the source of many of the general Mississippian traits, especially ceramics, which diffused southward (Brain 1971:75).

There were two important developments during the Mississippian period in the Lower Mississippi Valley. The Mississippian culture developed in the northern part of the valley and the Plaquemine culture developed in the south. According to Haag (1978:7), Plaquemine was an obvious outgrowth of Coles Creek into a cultural manifestation contemporaneous with the upper valley Mississippian.

In the pottery of the Plaquemine culture there was a reintroduction or reappearance of brushing along with other traits, apparently derived from Mesoamerica, such as long-necked water bottles; complex incised designs and engraving on vessel surfaces; clay effigies; pipes and ear spools (Ibid:7-8). Well-made, undecorated pottery was also present (Haag 1971:29).

Square and rectangular houses continued through Plaquemine times. Sometimes wall trenches are found. Through this technique, trenches were dug, poles were placed therein and dirt packed around so that the poles were able to stand erect (Haag 1978:8). Wattle-and-daub construction was also used. Gable roofs were thatch covered (Haag 1971:29).

Projectile points of the period are "small, often poorly formed, and not particularly diagnostic." Some small stemmed points with incurved sides that make the point resemble a fir tree do occur (Haag Ibid).

In Plaquemine times, the mounds were so large that they frequently had two levels. This is what Haag (1978:8) refers to as "composite mounds." Mounds continued to be arranged around a central plaza. This is suggestive that a ceremonial life in which the entire community participated was still an important activity, perhaps on a grander scale than in the preceeding periods (Ibid).

At this time very little information concerning the burial customs of Plaquemine groups has been found. The available evidence suggests that there was not much preoccupation with disposal of the dead (Ibid).

The entire development, the Mississippian and Plaquemine, represents the highest development of culture in the eastern part of the United States. There is no doubt that aboriginal population had reached its absolute peak at this time, and yet there is some indication that there was beginning a decline in total numbers of peoples long before Europeans arrived. It is believed that a major factor which contributed to the decline of this preColumbian population was an increase in warfare. This has been partially substantiated by the presence of palisades which are obviously a late prehistoric development in the southeast (Ibid).

Due to the presence of a well-developed system of agriculture, the Plaquemine culture was one of continuity and consistent development. Descendents of these people were encountered in the Lower Mississippi Valley in the seventeenth and eighteenth centuries, accounting for the good documentation of this period (Haag 1978:8).

The only Mississippian phase in the Pearl River Basin is what Phillips (1970:Figure 447) refers to as Bayou Petre. According to Brain (1971:77-78), ceramic types suggest that Mississippian peoples (or acculturated natives) entered the Delta subdivision of the Lower Valley, and brought about the development of the Bayou Petre phase.

Additional research may demonstrate that the Pearl River may have been a Plaquemine/Moundville interface and this should be considered when drafting future research designs for the Pearl River Basin. According to Dr. Galloway (1982:personal communication), another major problem of the area is the definition of what Mississippian cultures became what historic tribes. Research designs constructed to take into account these problems may provide much valuable information concerning the prehistory and proto-history of the area.

A total of seven sites in the Pearl River Basin have been recorded as having Mississippian components. Five of these sites are in the study area. These sites are listed in Table 4-8 and their approximate locations are depicted in Figure 4-10. Those sites in the study area are described in Appendix K.

TABLE 4-8

MISSISSIPPIAN SITES IN THE PEARL RIVER BASIN

SITE	BASIS FOR TEMPORAL PLACEMENT
*22Ha515	Mound
**22Ha529	Ceramics, lithics
*22Hi512	Ceramics
*22Lw510	Mound, ceramics
*22Lw514	Not given
**22Pr544	Not given
*16WA8	Ceramics

*In Corridor

**Not in Corridor

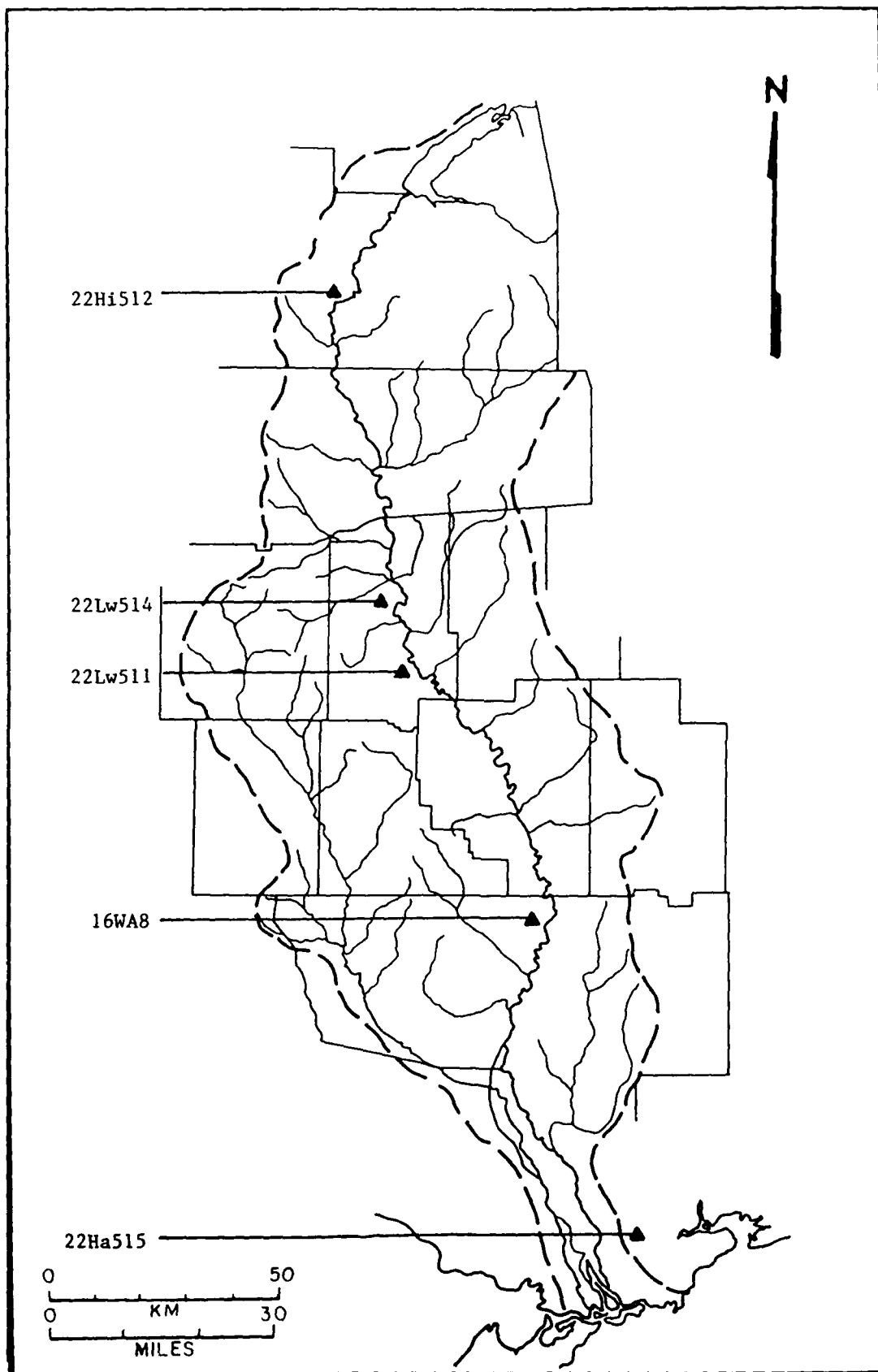


Figure 4-9. Approximate Location of Sites in the Study Area Containing Mississippian Components.

5. HISTORIC NATIVE AMERICANS

5.1 Historic Native Americans

The Pearl River Basin was occupied in proto-historic and historic times by a variety of Indian groups. Native American groups are customarily divided on the basis of their linguistic affiliations. Members of two linguistic stocks lived along the Pearl at various times in the historic era. The Muskogean group was represented by the Acolapissa, Choctaw, Pensacola and Tangipahoa, while the Siouan group was represented by the Biloxi.

5.1.1 Muskogean Group

5.1.1.1 Acolapissa

According to Swanton (1911:281) the name of this tribe has been derived from the word haklo-pisa, "those who listen and see," or from okla pisa, "those who look out for people." The Acolapissa have been referred to by a variety of other names. They have been called Melou pissas by Le Page du Pratz (1758, 2:219), Cenepisa by La Salle (Margry 1875-1886, Vol. 1:564), Colapissas by Penicaut (French 1869:38), Acolapissas by Sauvole (Margry 1875-1886, Vol. 4:462) and Kinipissa by L'Ange (Margry 1875-1886, Vol. 1:604).

According to Swanton (1946; Map 1), the Acolapissa were living along the lower Pearl River about 1650. However, according to Pat Galloway (1981: Personal Communication), there is no primary source to substantiate this statement. Mooney (1928) estimated the population of the Acolapissa including the Tangipahoa to be 1,500 in 1650. However, Swanton (1946:83) feels that Mooney's estimate is too high.

When Bienville visited the Acolapissa in the winter of 1699-1700, they were occupying six villages on the Pearl River about four leagues (11 miles) from its mouth. The French were informed that there were six villages and that the Tangipahoa had constituted a seventh, but the six were evidently only parts of one great settlement (Swanton 1911:281). Two days before his visit, the Acolapissa had been attacked by 200 Chickasaw led by English slave hunters (Swanton 1946:82). Bienville estimated that the Acolapissa had about 150 warriors in that year (Margry 1875-1886:449). La Harpe (1831:14) also visited the Acolapissa in 1699. His estimate of their population for that year was 300 warriors.

According to Swanton (1953:196), the Acolapissa moved from the Pearl River between 1702 and 1705 and settled on the north side of Lake Pontchartrain on a bayou called "Castembayouque" (now Bayou Castine). Six months later, the Natchitoches, under the guidance of St. Denis, moved to a site close to the Acolapissa (Swanton 1946:82). According to a census taken by Iberville in 1702, there were 250 families in this tribe (Margry 1875-1886, Vol. 4:602).

By 1722 (possibly as early as 1718, according to Penicaut), the Acolapissa had moved to the Mississippi River and settled on the east side, 13 leagues (35 miles) above New Orleans (Swanton 1953:196). In 1722, they were visited by Father Charlevoix (Swanton 1911:283) who placed their population at 700 with 200 warriors.

By 1739, the Acolapissa, Bayagoula and Houma had become amalgamated. Swanton (1946:82) believes that the Acolapissa and Bayagoula merged first and later united with the Houma. In 1739, the combined groups were reported to have 90 to 100 warriors (Claiborne 1880) and a total population of 270-300, exclusive of children (Swanton 1953:196). Dr. Pat Galloway (1981: Personal Communication) believes that the Amalgamation of these groups is suggestive of their cultural homogeneity. Claiborne (1880) describes the union of these tribes in the following passage:

The Houma, Bayagoula, and Colapissa are but one and the same nation in different settlements, and may all be classified as Colapissas, the first two being distinct in but one respect, their chiefs being great-grandsons, the one of a Houmas, the other of a Bayagoulas, which accounts for their preserving these names, although the original tribes have long been extinct.

In 1758, the Acolapissa were mentioned again. This time De Kerlerec describes them as one of the tribes which were destroyed by the "neighborhood of the French and trade in liquor" (Swanton 1911:284).

Virtually all of the information regarding subsistence for the Acolapissa was recorded by Penicaut when he was living with them at their village north of Lake Pontchartrain in 1706. The following information concerning food procurement by the Acolapissa is provided by Penicaut (Margry 1875-1886, Vol. 5:467-469):

They are quite neat (propres) in their eating. They have particular pots for each thing they are going to cook -- that is to say, the pot which is for meat is not used for fish; they dress all their food with bear fat, which is white in winter, when it is coagulated, like hog's lard, and in summer it is like olive oil. It has no bad taste; they eat it with salad, make of it pastry, fried dishes, and all that suits them generally.

With regard to fruits, few are found. They have, however, peaches in the season which are even larger than in France and more sugary; strawberries, plums, and a grape which is rather small (maigre) and not at all as large as that of France. There are also nuts which they crush, of which they make flour in order to make porridge for their children with water; they also make of them hominy, or bread by mixing it with cornmeal.

When they go to hunt they are dressed in skins of deer with their horns, and when they see one of these animals at a distance in the woods they make the same gestures as it does, which, as soon as it perceives them, runs up, and when it is within easy reach of their guns, they fire and kill it. They kill many of them in this manner, and it must be admitted that they are more skillful than the French as well in the chase of the wild buffalo as in that of the bear and deer.

Fishing was also practiced by the Acolapissa. This is described by Penicaut (Margry 1875-1886, Vol. 5:466) in the following:

After dining we went to see their fisheries. They drew from the lake their nets which were filled with fishes of all sizes. These nets are really only lines about six fathoms long. A number of small lines are fastened to these a foot apart. At the end of each line is a fishhook where they put a little piece of hominy dough or a little piece of meat. With that they do not fail to take fishes weighing more than fifteen to twenty pounds. The end of each line is attached to a canoe. They draw them in two or three times a day, and many fish are always taken when they draw them in.

Mussel shells were collected by the Acolapissa and used for scraping the inside of their boats during the construction process (McWilliams 1953:16). The presence of pearls in these shells led to the naming of the river. According to Du Ru (Butler 1934:66), the river had already been referred to as Pearl by the Acolapissa when he visited them in 1700.

Although the use of pearls by the Acolapissa has not been documented, they were widely used by other tribes of the Southeast and the Lower Mississippi Valley. According to an early chronicler, the Natchez gathered pearls from the upper regions of the river and fashioned necklaces from them which they placed around the necks of their idols (Swanton 1946:489). No record of pearl hunting operations along the lower part of the Pearl River exists (Ibid).

According to Bienville (Rowland and Sanders 1927, Vol. 3:535), when the Acolapissa were living north of Lake Pontchartrain, opposite the mouth of Bayou St. John, they furnished almost all of the fresh meat consumed at New Orleans. He also mentions that they did this without neglecting the cultivation of their lands which produced a great deal of corn.

The only account of Acolapissa houses on the Pearl was documented by Du Ru, Iberville's chaplain, who visited one of their villages in 1700. According to him (Butler 1934:66), the great village of the Colapissa did not consist of more than 15 or 20 cabins. These cabins were surrounded by a palisade of pointed stakes due to a recent invasion by

the Chickasaw. The cabins were made of bark until regular dwellings could be erected. House descriptions for the Acolapissa village on the Mississippi River in 1722 were provided by Father Charlevoix (Swanton 1911:283) in the following:

The 4th we arrived before noon at the great village of the Colapissas. It is the finest village of Louisiana, yet they reckon in it but 200 warriors, who have the character of being very brave. Their cabins are in the shape of a pavilion, like those of the Sioux, and they seldom make any fire in them. They have a double roof; that in the inside is made of the leaves of the palmetto (lattanier) interwoven together; that on the outside is made of mats.

The cabin of the chief is 36 feet in diameter. I had not before seen one so large, for that of the great chief of the Natchez is but 30 feet.

In 1732, De Batz made sketches of Acolapissa houses. In his drawings he also depicted their houses as circular in form (Swanton 1946:41).

Information concerning the religious practices of the Acolapissa is largely confined to a brief description of their temple and the daily ritual they performed in association with it. Only two authorities on the Acolapissa temple exist. These are Penicaut, who stayed with this tribe in 1706 when they lived near Lake Pontchartrain, and De Batz, a French architect or engineer who made drawings of their temple in 1732 when they were living along the Mississippi River (Swanton Ibid:619). A description of their temple as it was when they lived near Lake Pontchartrain is provided by Penicaut (Margry 1875-1886, Vol. 5:467-469) in the following:

With regard to their religion they (the Acolapissa) have a round temple, before which they present themselves evening and morning, rubbing their bodies with white earth and raising their arms on high; they mutter some words in a very low voice during a quarter of an hour. There are at the door of the temple wooden figures of birds; there are in the temple a quantity of little idols, as well of wood as of stone, which represent dragons, serpents, and varieties of frogs, which they keep enclosed in three coffers which are in the temple, and of which the great chief has the key.

According to Swanton (1946:82), the Acolapissa rebuilt their temple when they moved from their old town (near Lake Pontchartrain) to the Mississippi. A sketch was made of this edifice by De Batz (Ibid:pl. 62) in 1732, who stated that "ceremonies were performed before certain images kept within" (Bushnell 1927:3-4). The drawing by De Batz (Swanton

1946:pl. 62) illustrates a circular building with three wooden figures mounted on vertical supports on the roof. According to his calculations, the temple was 22 feet by 24 feet. De Batz believed the wooden figures represented the bodies and tails of turkeys with the head of an eagle (Bushnell 1927:3). The door construction is described by Swanton (1946:429) in the following:

However, the door of the Acolapissa temple figured by De Batz seems to be of a construction to which Elvas' term "grating" might be applied. This is stiffened by four cross-pieces to which it is tied at intervals, apparently with withes, and withes also seem to have been used as hinges.

Two cultural traits of the Acolapissa which might be associated with religious practices are tatooing and hair removal. Tatooing, according to Swanton (1946:Ibid), was a common trait of Southeastern Indian groups. This trait, as it was practiced among the Acolapissa, is described by Penicaut (Margry 1875-1886, Vol. 5:467-469):

The Nassitoches are handsomer and better formed than the Colapissas, because the latter, as well men as women, have the body entirely tatooed. They tatoo themselves almost all over the body with needles, and rub these punctures with charcoal from the willow crushed very fine, which does not poison the puncture. The women and girls of the Colapissas have the arms and face thus tattooed, which disfigures them villanously; but the Nassitoches, as well men as women and girls, do not provide themselves with these tatooings, which they hate. This is why the women are more beautiful, besides the fact that they are naturally lighter.

The practice of hair removal, as it was practiced by the Acolapissa, is described by Penicaut (Margry Ibid) in the following:

These savages have no other hairs than those of the head. They pull them out as well from the face as elsewhere; they take off the hair by means of ashes of shells and hot water, as one would do to a sucking pig, as well the men as the women and girls.

Two references to Acolapissa mortuary practices have been recorded. Penicaut (Margry Ibid) describes the burial process in the following passage as he observed it among the Acolapissa in 1706:

When a savage dies they prepare a kind of tomb, or rather scaffold, raised 2 feet from the ground, on which they place

the dead body. They cover it well with rich earth and put over it the bark of trees, for fear of the animals and birds of prey; then, underneath, they place a little pitcher filled with water, with a dish full of meal. Every evening and morning they light a fire there beside it and go to weep there. The richer hire women to perform this latter office. At the end of six months they unwrap the body of the dead; if it is consumed, they put the bones into a basket and carry them to their temple; if it is not consumed, they remove the bones and bury the flesh.

Another account of Acolapissa mortuary practices is given by Paul Du Ru (Butler 1934:27). According to him, the death of an Acolapissa chief is always accompanied by a dozen of his most loyal friends who kill themselves to be buried with him.

According to Dr. Pat Galloway (1981:Personal Communication), the Acolapissa mortuary ritual is very similar to that of the Choctaw. She believes that this may be suggestive of a relationship between the two groups at one time.

At the present time there are no known Acolapissa sites in the Pearl River Basin. Historic artifacts have been recovered from sites in the basin, however, there is not enough information to definitely associate them with sites of the Acolapissa (Sam McGahey 1981:Personal Communication).

5.1.1.2 Choctaw

Surpassed only by the Cherokee, this tribe was the second largest in the Southeast. The size of this tribe is discussed by Father Beaudouin (Rowland and Sanders 1927, Vol. 1:155), a Jesuit missionary who spent several years among them, in the following:

The Choctaw nation is the one that occupies the greatest territory on this continent. We reckon forty-two villages of people who speak exclusively the same language.

Swanton (1946:Map 1) depicts them near the head of the Pearl in 1650. He (Ibid:123) estimates that the Choctaw population in that year was approximately 15,000.

Although the Choctaw primarily inhabited the upper Pearl River, they were occasionally recorded along its lower reaches. During Roullet's 1732 expedition down the Pearl River, he noted an early Choctaw trail (Figure 6-5) crossing the lower Pearl which was used when they went to the Natchez. Roullet recorded other Choctaw villages during his travels, however, none of these villages has been located as being in the study area.

Swanton (1946:121) believes that they were the group encountered by DeSoto's expedition in the province of "Pafallaya." The group was called "Apafalaya" which may have been a form of the Choctaw word "Pasfalaya" meaning "Long Hair"; Swanton (Ibid) cites Adair as saying the name was applied to the Choctaw because the men let their hair grow to its full length, while the tribes surrounding them did not.

In 1675, the Choctaw were encountered by Bishop Caldero who reported that they possessed a "great and extensive province" which included 107 villages (Wenhold 1936:10). Only passing mention was made of the tribe between this date and 1699, when the French settled in Louisiana.

The French began to befriend the Choctaw, since they provided a buffer between them and the English to the east. In order to establish better relations with the Choctaw the French sometimes placed children in Choctaw villages in order to learn their language. As their children grew up they became valuable interpreters and intermediaries between the French and the Choctaw (Dr. Pat Galloway 1981:personal communication). A Mr. Simon Favre, who is believed to have lived along the Lower Pearl, served as interpreter to the Choctaw in the 1740's. It is not known if he learned the language in the manner described above. Several of the Choctaw groups sided with the French, but a number remained loyal to the British. A civil war among the Choctaw groups resulted and the English faction was defeated in 1750. The Choctaw continued to fight against the Chickasaw and Creeks until 1763, when France ceded all of her territories east of the Mississippi to England. Spain obtained France's territory west of the Mississippi and continued to incite the Choctaw against the English and friction between Choctaws and Creeks continued. Swanton (1946:Map 11) depicts some of the Choctaw group as moving to the mouth of the Pearl in 1763.

Census figures during the early years of United States rule (1814; 1822; 1831) for the Choctaw population range between 15,000 and 25,000. More and more English settlers began to make demands upon the Choctaw land. The Treaty of Dancing Rabbit Creek, signed in 1830, ceded Choctaw land and granted them other tracts along the Red River in Oklahoma. Most of the tribe emigrated to Oklahoma in between 1831 and 1833 (Ibid). However, some remnants are still present in the vicinity of the Pearl River today.

The major division of many tribes of North America was the moiety, a system by which a group was divided in half, resulting in two separate social units. The Choctaw had a true moiety system. One was called Imoklahsa, which means "their own people" or "friends"; and the other Kashapa okla, or "divided people." Another early writer gives them the names Yuka-tathlapi, "the five slave groups" and Iholahtha, or "chiefs" (Swanton 1946:663). One moiety seems to have been a war division, with the other being concerned with ceremonial matters relating to peace. The Choctaw moieties were strictly exogamous. Funerals for a person of one moiety were conducted by persons from the other.

Choctaw houses were made of wood covered with mud but were then covered with cypress or pine bark (Bushnell 1919:63-64). They had no windows, doors which ranged from three to four feet in height and two smoke-holes. The inside was surrounded by cane beds which were raised from three to four feet from the ground.

The Choctaw were known as being "relatively indifferent to religion" (Swanton 1946:777-780). They did have a sky deity concept, associated with the sun, and there were many subordinate beings such as pygmies and a "Long Black Being." They believed that the world had once been flat and marshy and that a human form had descended from above and caused the sacred hill Nanih Waiya to rise. The Choctaw were brought out of the hill. Thunder and Lightning were presented as two great birds and a number of legends existed regarding the origin of corn. There were few religious ceremonies among the Choctaw but they did have a five-day green corn ceremony. There were two classes of shamans, one which could foretell the future and the other which could make rain.

According to Swanton (1946:725), Choctaw mortuary practices were so unique that they have been often described. Adair (1775) and Romans (1775) are cited by Swanton (1946) as major sources of his information concerning this subject. Two problems regarding Choctaw funeral practices exist: 1) many of the accounts are not in agreement and 2) none of these accounts has been documented archeologically.

The Choctaw dead, accompanied by food and property, were placed on a scaffold near their house and the skull was painted red. The bier was made of cypress bark and the body was covered with bear or bison skins or a woolen blanket. The scaffold was decorated and if the deceased was a person of importance the poles were painted red. For four days in succession a small fire was lighted under the scaffold (Swanton 1946:725-726).

Benches were constructed near the scaffold for the mourners who appeared three times a day. In addition, a wall or fence of mud was built around the scaffold. After the flesh was decayed, a bone picker removed the flesh and gave the bones to the family who put them into a chest made of bones and splints which was taken to the cantonal mortuary house. If the bones belong to a chief, they were taken to a separate charnal house (Swanton Ibid).

After the charnal house had become full, the grave boxes were removed and piled up into a pyramid which was covered with earth. This burial mound might be added to on several different occasions, and according to one informant, the bone house was covered over in situ after it had become full (Swanton Ibid).

In the early part of the 19th century, missionaries influenced the Choctaw to change their burial practices. The body was buried in the ground immediately and seven poles were placed in the ground around it, three on each side and one at the head. On the pole placed at the head a string of grapevine hoops and a flag were hung. Later, these poles were removed and carried off into the woods (Ibid). The post molds left by these poles should be archeologically detectable.

Historic Choctaw sites have been identified in east central Mississippi based on the presence of a unique pottery type known as Chickachae Combed. According to Haag (1953:25), this single pottery type represents the total of known archeological remains of the Choctaw. There is a marked similarity between Chickachae Combed pottery and Bayougoula Incised, an earlier form. According to Dr. Pat Galloway (1982: personal communication), since Bayougoula Incised is earlier than Chickachae Combed, the influence might have flowed from the one to the other through possible close cultural affiliations. She also believes that archeological evidence from the late Mississippian period on the Lower Pearl may help to define the as yet unknown ethnic identity of the Western and Sixtowns Choctaw. No historic Choctaw sites have been recorded in the study area.

In 1832, a Choctaw village on the Strong River in Smith County was still inhabited. An example of Chickachae Combed pottery was recovered from this site (Richard Marshall 1982:personal communication).

5.1.1.3 Pensacola

The Pensacola tribe was probably first encountered by the Narvaez expedition along the Gulf Coast (Swanton 1946:172). However, the first definite chronicle of the group was written in 1677 by Barroto. At that time, they were at war with the Mobile Indians.

In 1698, the Spanish established a fort they named Pensacola. The tribe was believed to have been scattered and destroyed by that time. However, Swanton (Ibid:173) notes that this belief was incorrect, since Bienville encountered the Pensacola in 1725. At that time, they were occupying an area on the Pearl River just south of the Biloxi (Ibid:Map 1). Bienville estimated that they and the Biloxi together had about 40 warriors.

Swanton (Ibid:173) states that the language and customs of the Pensacola "seem to have been almost identical" with those of the Choctaw (described above). The Pensacola eventually merged with and became indistinguishable from the Choctaw.

Immediately following the death of a Pensacola chief, the corpse was dried by a fire. Afterwards, it was placed on a kind of table near the door of the temple and mourners came every day to address it and offer it food. The body was then placed with the bodies of the preceding chiefs around the interior of the temple (Swanton 1946:727).

No historic Pensacola sites have been identified in the Pearl River Basin. Williams (n.d.:83), believes, however, that the historic component at the Ancient Earthwork Fortification Site (22Ha515) may have been occupied by the Pensacola, Biloxi or Apalachee.

5.1.1.4 Tangipahoa

Swanton (1911:Plate 1) depicts this tribe living alongside the Acolapissa near the mouth of the Pearl River. Iberville stated they had

formed "a seventh town of the Acolapissa." However, they were apparently destroyed in 1682 by the Houma. Swanton feels that theirs was the town passed by LaSalle which had been plundered and burned and which contained three cabins full of dead bodies.

The Tangipahoa were almost certainly agriculturalists, since the three translations given for their name are "white maize," "those who gather maize stalks" and "corn cob." The name is "plainly of Choctaw origin" (Swanton Ibid:30).

Swanton (Ibid) believes their language to be very compatible with that of the Acolapissa, and states that they may originally have been a part of the Acolapissa tribe (Swanton 1946:190). There are no population estimates for them separate from the Acolapissa.

No sites belonging to the Tangipahoa have been identified in the study area. Due to their proximity to the Acolapissa at certain times, and the probable similarity of much of their material culture it would be a difficult task to recognize a Tangipahoa site (Sam McGahey 1981:Personal Communication).

5.2.1 Siouan Group

5.2.1.1 Biloxi

The Biloxi were a Siouan tribe which Swanton (1946:96) deems former residents of the Ohio Valley. Perry (1978) groups them with the Southeastern United States tribes which sought refuge in Louisiana during the seventeenth and eighteenth centuries because of European settlers' encroachment upon their native lands.

They were encountered near Mobile by Iberville when he brought colonists there in 1699. The combined tribes of the Biloxi, Pascagoula and Mottobi had approximately 130 warriors at that time (Swanton 1946:98). They were visited that same year by Bienville; however, the next year Iberville found their principal village (which had some 30-40 cabins) abandoned.

A few years later, they were persuaded by St. Denis to settle on a small bayou between New Orleans and Lake Pontchartrain, and fifteen warriors joined him in his expedition against the Chitimacha in 1707.

In 1722, an abandoned Acolapissa village on the Pearl River was occupied by the Biloxi, but before 1730 they had moved back to the Pascagoula River with the Pascagoula tribe (Ibid). In 1763, both the Biloxi and the Pascagoula moved to the mouth of the Red River near Marksville. They did not remain there long, moving soon to Bayou Rapides and then to the mouth of the Rigolet de Bon Dieu, and then to Bayou Boeuf. According to Swanton (Ibid:727), the burial customs of the Biloxi were the same as the Pensacola.

In 1886, Dr. Gatschet, a linguist with the Smithsonian Institution's Bureau of Ethnology, had discovered remnants of the Biloxi tribe near LeCompte, Louisiana. By 1912, he and other linguists were able to collect enough material for a Bureau of American Ethnology Bulletin to be published on that language (Dorsey and Swanton 1912). Bushnell (1919:16) has described the Biloxi as a "detached" Siouan tribe, and compares their language to that of the Tutelo and Saponi groups in Virginia.

No historic Biloxi sites have been identified in the study area. Roullet, during his journey down the Pearl River in 1732, mentions an abandoned Biloxi village but does not give any details. Williams (n.d.:83) believes that the historic component at the Ancient Earthwork Fortification Site (22Ha515), recorded by Richard Marshall in 1970, may have been occupied by the Biloxi, Pensacola or Apalachee.

6. EURO-AMERICAN SETTLEMENT

6.1 Euro-American Settlement

6.1.1 Exploration Period (1513-1699)

During this period various Spanish and French explorers traversed Louisiana and Mississippi in their quest for new lands to conquer. Although some of these men may have come in contact with the Pearl River, it is not mentioned in their accounts.

The first explorers in the region were Spanish. They explored and settled the islands of the West Indies within 20 years after the discovery of America. During the next 30 years, four Spaniards explored the eastern two-thirds of the South and discovered the Mississippi River (Davis 1959:25).

Ponce de Leon tried to establish a colony on the west coast of Florida in 1513, but was driven out by Indians. In 1519, Alonso de Pineda sailed along the Gulf Coast and discovered the mouth of a large river. Historians believe it was probably the Mobile River (Ibid).

In 1528, Panfilo de Narvaez landed in Florida and attempted to establish a colony. Most of his men were killed during Indian battles, however, and he built some crude boats and started westward along the coast of the Gulf of Mexico. Near the mouth of the Mississippi River his ships were wrecked and only a few escaped (Ibid). His journey must have taken him by the mouth of the Pearl River, making him the first explorer to enter the study area.

Hernando de Soto arrived at the west coast of Florida in 1539. He traveled from Florida to Arkansas in search of a rich Indian nation he never found (Ibid), and became the first white man to visit Mississippi (Stone 1975:23). It is doubtful that he encountered the Pearl River as his travels took him to the northern part of Mississippi above the Pearl River (Claiborne 1880:2-11).

It was nearly 140 years later before another European visited the Lower Mississippi Valley. The French had founded the town of Quebec, Canada in 1608, and their explorers and fur traders began pushing back the frontier westward along the Great Lakes (Davis 1959:26). In 1682, Rene Robert Cavelier, Sieur de la Salle, a Canadian, and another explorer, Henri de Tonti, travelled down the Mississippi River and claimed Louisiana for France (Ibid).

6.1.2 The French Colonial Period (1699-1763)

The recorded history of the study area begins with Pierre le Moyne, Sieur d'Iberville in 1699. Control of the study area by various

countries is depicted in Table 6-1. At this time England, Spain and France were competing for control of the entire continent of North America and there was concern by some leaders in Canada and France to settle the Lower Mississippi Valley (Ibid).

Father Louis Hennepin a member of some of La Salle's expeditions, was now a subject of England. In 1697 and 1698, he published two books urging England to take possession of the entire Mississippi Valley (Ibid). When France learned of the English plan to establish a colony in Louisiana, d'Iberville, a Canadian, was chosen to lead the first group of French colonists to Louisiana in an effort to thwart the British.

On October 24, 1698, d'Iberville sailed from Brest, France (Davis 1959:28). This was the first of three voyages he was to make between 1698 and 1702 (Giraud 1974:31).

On January 31, 1699, d'Iberville's ships anchored off Mobile Bay signaling the beginning of French occupation of Louisiana. He left the bay on February 27, 1699 intent on reaching the Mississippi River (Giraud Ibid) and reached his destination on March 2, 1699 (Davis 1959:29). This is the first recorded journey to transpire in the vicinity of the Pearl River.

M. d'Iberville returned to France on May 4, 1699 after completing Fort Maurepas on Biloxi Bay. In his absence he left Sieur Sauvole de la Villantray in charge of his newly-formed colony (Giraud 1974:34).

Shortly after d'Iberville's departure, Sauvole sent out parties to explore the neighboring territory. Jean Baptiste le Moyne, Sieur de Bienville, d'Iberville's brother, led an expedition intent on reaching the Mississippi River and gaining a knowledge of the new land (McWilliams 1953:9). During this venture, the expedition visited the Pearl River which they called the Riviere-aux-Pierres (Ibid).

The early years of colonization were characterized by small groups of settlers living in the various colonies with no interest in farming and other domestic activities. Most of the first settlers preferred to explore the region for gold and other precious metals. They had no wives and families and no crops were raised the first year (Davis 1959:31). None of these early colonies were located on the Pearl River.

The beginnings of trade in the region occurred in 1700, when Henri de Tonti brought the first shipment of furs down the Mississippi River (Ibid:36). Although this activity was not directly related to the Pearl River, it was important in the development of the Lower Mississippi Valley area.

After 1703, the French Government maintained a storekeeper at Balize, near the mouth of the Mississippi and by 1708, trade with Cuba and other West Indies islands was well established (Ibid).

TABLE 6-1
OWNERSHIP OF STUDY AREA
(1699 - Present)

DATE	STUDY AREA OWNERSHIP	
	GULF OF MEXICO-31°N	31° N - 32°28'N
1810 -	United States	United States
1795 - 1810	Spain	United States
1779 - 1795	Spain	Spain
1763 - 1779	Britain	Britain
1699 - 1762	France	France

In 1718, work began on the building of New Orleans which was to be the capitol of the Louisiana colony (Ibid:46). This city, which was founded in 1721, brought activity into the Pearl River area (mouth) as immigrants arriving from Europe traveled by way of the Rigolets, a water passage from the Gulf of Mexico to Lake Pontchartrain, in order to reach their destination (Roberts 1946:27-29).

From July 14 to August 8, 1732, Regis Du Roullet surveyed in his pirogue the entire course of the Pearl River. In his journal he recorded detailed descriptions of the river which included compass readings, sandbanks, bluffs, tributaries, the nature of the river bottom and the width, depth and swiftness of the current. It has been suggested by De Villiers that the purpose of Du Roullet in making this journey was to determine from a military point of view whether the Pearl River was navigable and could be used by the expedition planned against the Chickasaws with whom the Natchez had taken refuge (Rowland and Sanders 1927:149 notes).

Roullet constructed a small palisade fort on the upper Pearl in the Choctaw settlement of Sapachitto in 1732, with the intent of using it as a trade depot (Dr. Pat Galloway 1982:personal communication). According to Dr. Pat Galloway, there may be further evidence uncovered regarding intermittent French use of the river as a trade artery, especially since this was du Roullet's real purpose in surveying it.

6.1.3 British Colonial Period (1763-1779)

According to the Treaty of Paris in 1763, Spain ceded to Britain that part of Louisiana east of the Mississippi except for the Isle of Orleans. Thus, by 1763, the Mississippi River divided Spanish North America from British North America (Skates 1979:32). In the same year, the colony of West Florida was established (Claiborne 1880:94) with all lands above it regarded as Indian territory (Figure 6-1).

British authorities endorsed an extremely liberal land policy for West Florida. Every head of a household could claim one hundred acres for himself and fifty for each member of his household, including slaves. Veterans of the French and Indian War could claim large grants - five thousand acres for field-grade officers, three thousand for captains, two thousand for subalterns or staff officers, two hundred for non-commissioned officers and fifty for privates. In addition to these, through influence in the colony or with the crown in England, favored individuals could gain huge tracts of fertile soil (Skates 1979:35).

When the British discovered that the northern boundary of West Florida at 31 degrees north latitude left the fertile areas in the river valleys north of Mobile and the rich Mississippi River lands north of Baton Rouge beyond the boundaries of the colony, the British Board of Trade, in 1764, moved the northern boundary of West Florida to 32 degrees 28 minutes north latitude, a line from the mouth of the Yazoo River on the west to the Chattahoochee River on the east (Ibid:33).

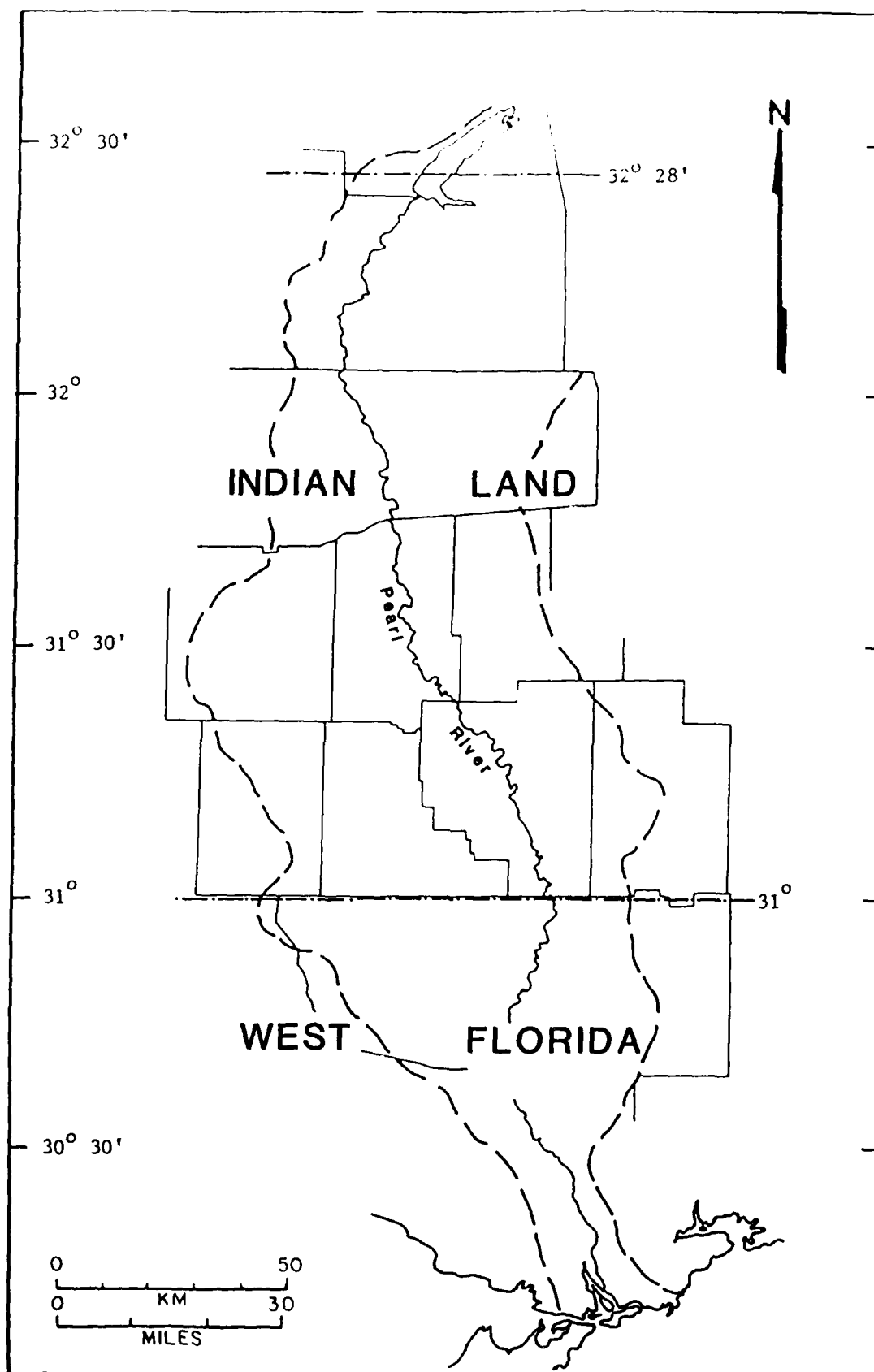


Figure 6-1. Study Area During the British Colonial Period (1763-1779).

During this period no major settlement is recorded along the Pearl River. Most of the activity in West Florida was along the Mississippi River to the east and Mobile Bay to the west.

Most of the Pearl River area, especially above the West Florida Colony, was inhabited by Indians. A map of the Pearl River in 1765 shows no settlements along the river and depicts the Chactaws (Choctaws) or Flathead Indians living along the upper reaches (Ross 1772).

People passed through the region and, undoubtedly, crossed the Pearl but little is mentioned of them in these early accounts. One such traveler, William Bartram (1791), a famous botanist, passed through the region in 1777, and mentioned settlements, some of which were apparently located along the east side of the Pearl River.

Bartram (Ibid:334-338) departed Mobile and sailed westward along the Alabama and Mississippi coast through the Rigolets and into Lake Pontchartrain. He continued along the north shore of the lake and entered Lake Maurepas before traveling up Bayou Manchac to the Mississippi River.

When he left Mobile, he was suffering from headaches, fever and an eye infection. He traveled on a trading boat which belonged to a Frenchman whom he described as the "general interpreter" of the Choctaw nation. This Frenchman was probably Simon Favre who had served as interpreter to the Choctaw as early as the late 1740's (Dr. Pat Galloway 1981:Personal Communication). The man was returning to his plantation on the Pearl River, and Bartram went with him. Due to the severity of his eye infection, Bartram was not able to report any observations between leaving Mobile Bay and arriving at the Frenchman's house on Pearl River (Ibid:334-336).

After staying with the Frenchman for three days, he departed for the residence of a Mr. Rumsey, an Englishman who lived on Pearl Island about 12 miles from the Frenchman's plantation. Rumsey was reported to have a variety of medicines and Bartram went there seeking a cure for his eye infection. He stayed with the Englishman four to five weeks while recovering from his illness (Ibid:335-336)..

As his health improved, he began to explore Mr. Rumsey's property. His description of the island is presented below (Bartram 1791:336-338):

As soon as I acquired strength to walk about, and bear the least impression of open day light on my eyes, I made frequent, indeed I may say daily excursions in and about this island, strolling through its awful shades, venerable groves and sublime forests, consisting of the Live Oaks and Magnolia grandiflora, Laurus Borbonia, Olea Americana, Fagus sylvatica, Laur. Sassafras, Quercus hemispherica, Tilia, Liquidambar styraciflua, Morus Gleditsia, Callicarpa, Halesia, etc.

The island is six or seven miles in length, and four or five in width, including the salt marshes and plains, which invest it on every side, I believe we may only except a narrow strand at the South end of it, washed by Lake Borgone at the Regulletts, which is a promontory composed of banks of sea-shells and sand cast up by the force of winds, and the surf of the Lake; these shells are chiefly a small species of white clam shells, called les coquilles. Here are a few shrubs growing on these shelly heights, viz. *Rhamnus frangula*, *Sideroxylon*, *Myrica*, *Zanthoxylon clava Herculis*, *Juniperus Americana*, *Lysium salsum*; together with several new genera and species of the herbaceous, and suffruticose tribes, *Croton*, *Stillingia*, etc., but particularly a species of *Mimosa* (*Mimosa virgata*), which in respect of the elegance of its innated leaves, cannot be exceeded by any of that celebrated family. It is a perennial plant, sending up many nearly erect stems from the root or source; these divide themselves into many ascendant slender rods like branches, which are ornamented with double pinnated leaves, of a most delicate formation. The compound flowers, are of a pale, greenish yellow, collected together in a small oblong head, upon a long slender peduncle, the legumes are large, lunated and flat, placed in a spiral or contorted manner, each containing several hard compressed seeds or little beans.

The interior and by far the greater part of the island consists of high land; the soil to appearance a heap of sea sand in some places, with an admixture of sea shells; this soil, notwithstanding its sandy and sterile appearance, when divested of its natural vegetative attire, has, from what cause I know not, a continual resource of fertility within itself: the surface of the earth, after being cleared of its original vegetable productions, exposed a few seasons to the sun, winds, and triturations of agriculture, appears scarcely any thing but heaps of white sand, yet it produces Corn (*Zea*), Indigo, Batatas, Beans, Peas, Cotton, Tobacco, and almost every sort of esculent vegetable, in a degree of luxuriance very surprizing and unexpected, year after year, incessantly, without any addition of artificial manure or compost: there is indeed a foundation of strong adhesive clay, consisting of strata of various colors, which I discovered by examining a well, lately dug in Mr. Rumsey's yard; but lying at a great depth under the surface, the roots of small shrubs and herbage, cannot reach near to it, or receive any benefit, unless we may suppose, that ascending fumes or exhalations, from this bed of clay, may have a vivific nutritive quality, and be received by the fibres of the roots, or being condensed in the atmosphere by nocturnal chills, fall with dews upon the leaves and twigs of these plants, and there absorbed, become nutritive or exhilarating to them.

Besides the native forest trees and shrubs already noted, manured fruit trees arrive in this island to the utmost degree

of perfection, as Pears, Peaches, Figs, Grape Vines, Plumbs, etc.; of the last mentioned genus, there is a native species grows in this island, which produces its large oblong crimson fruit in prodigious abundance; the fruit, though of a most enticing appearance, is rather too tart, yet agreeable eating, at sultry noon, in this burning climate; it affords a most delicious and reviving marmalade, when preserved in sugar, and makes excellent tarts; the tree grows about twelve feet high, the top spreading, the branches spiny and the leaves broad, nervous, serrated, and terminating with a subulated point.

According to Gagliano, Fulgham and Rader (1979:3-25), Bartram's description of Pearl Island sounds more like Campbell Island, which lies on the east side of the mouth of Pearl River, or possibly the eastern bluff of the Pearl River Mouth area. This could be significant, as Site 22HA541 is the location of an old plantation house which may also date from this time.

6.1.4 Spanish Colonial Period (1779-1795)

From 1779 until 1795, Spain controlled all of Louisiana east of the Mississippi River (Figure 6-2). When the American Revolution began in 1775, all of West Florida was still under British control. The English colonists in East and West Florida did not join their kinsmen along the Atlantic Seaboard and Louisiana became a center of war activities for both sides (Davis 1959:92).

Bernardo de Galvez was the Governor of West Florida during this time and he was sympathetic with the American cause. In May of 1779, Spain declared war against Great Britain and, after the capture of Baton Rouge on September 21, 1779, West Florida was in the hands of the Spanish (Ibid).

Spain's conquest of West Florida was confirmed in 1783 at the Paris negotiations that ended the wars of the American Revolution (Skates 1979:44). When the Spanish began their occupation of West Florida in 1779, the area was almost entirely uninhabited (Thigpen 1979b). When Galvez captured the Florida parishes from the British in 1779, for example, only 15 to 20 English families were recorded as living in the area now known as St. Tammany Parish (Gagliano, Fulgham and Rader 1979:3-19).

The area, now referred to as St. Tammany Parish was much less thickly populated than the other sections of West Florida. This was largely due to hostile Choctaw Indians who drove away those settlers attempting to settle in this region (Carter 1931:37).

Because West Florida was so sparsely populated, the Spanish were liberal in their granting of land to settlers, letting them have the land at no cost if they would meet certain obligations. In order to hold their land grants, settlers were required to live on, and to culti-

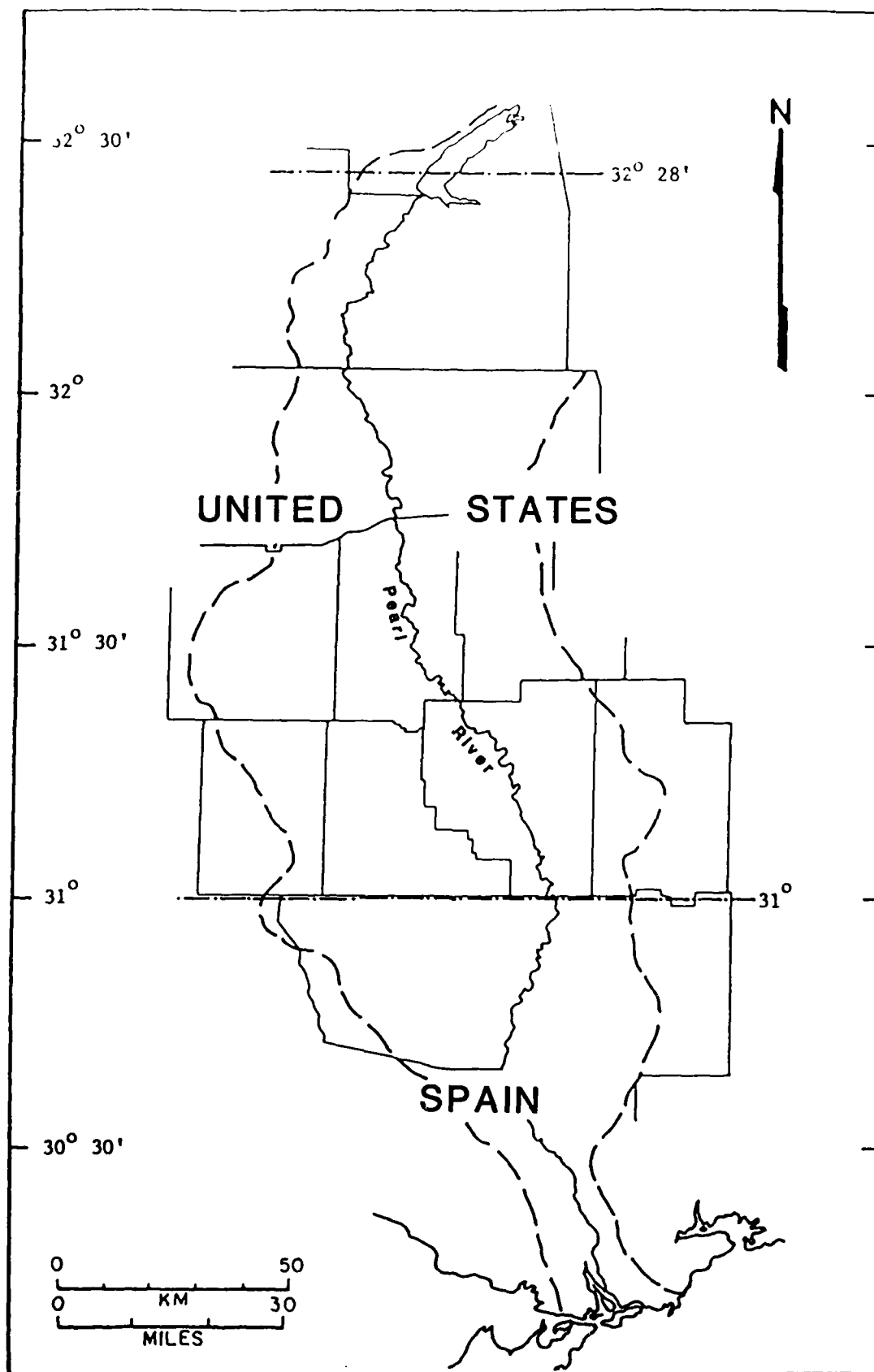


Figure 6-2. Study Area During the Spanish Colonial Period (1779-1795).

vate a reasonable amount of the land for not less than three years. After the three years were up settlers were entitled, at no cost, to Spanish land patents or deeds (Thigpen 1965a:176).

As a result of this generous policy, many emigrants from the southern United States and from the Atlantic Seaboard settled along and back from Pearl River in Spanish territory (Cultural Arts Committee 1976:164). Most of the original settlers of what is now Washington Parish came from the Carolinas, Kentucky and Georgia (Dr. E. Russ Williams 1981:Personal Communication).

The size of a land grant to a settler depended on the size of their family, the number of slaves owned and the number of cattle and other livestock brought in. After the first three years were up, if the settler had complied with Spanish law and regulations, he could apply for more land for a number of reasons, among them, an increase in the size of the family or in the number of slaves, or in the number of cattle and other livestock owned (Thigpen 1965a:176).

During the Spanish occupation, the main economic activities of the settlers along the Pearl River were cattle raising, farming and the exploitation of pine tar for Spanish ships (Ibid:177).

About 1790, due to pressure from the leaders of the Catholic Church, the Spanish Government began to require from settlers an oath of allegiance to the Catholic Church. Many of the settlers in this area were Protestants. Most of the later arrivals refused to become members of the Catholic faith and could not qualify for land grants. As a result, these settlers travelled the Pearl River north of the 31st degree of latitude (the line between the U.S. and Spain), and settled in what is now Marion County, Mississippi. Emigration into what is now Pearl River and Hancock Counties virtually ceased. The Spanish authorities were eager for settlers in their new territory and after a short time, with no new settlers moving in, reverted to their old policy of admitting all who came without religious restriction. With these religious restrictions removed, the tide of emigration began again and steadily increased until 1811, when the United States occupied West Florida (Ibid:176-177).

One of the early settlers on the Pearl River was Louis Le Fleur, a French-Canadian who came to the area in 1792 and established a trading post on the high bluffs overlooking the Pearl River in what is now downtown Jackson, Mississippi. Le Fleur became involved in the keel-boat business and was occasionally employed by the United States government to transport goods (Robertson n.d.:3).

6.1.5 Spanish and American Colonial Period (1795-1810)

During this period the study area was controlled by two separate powers. West Florida was still under the domination of Spain, while the area above 31 degrees north latitude, the northern boundary of West Florida, was now in the hands of the United States (Figure 6-3).

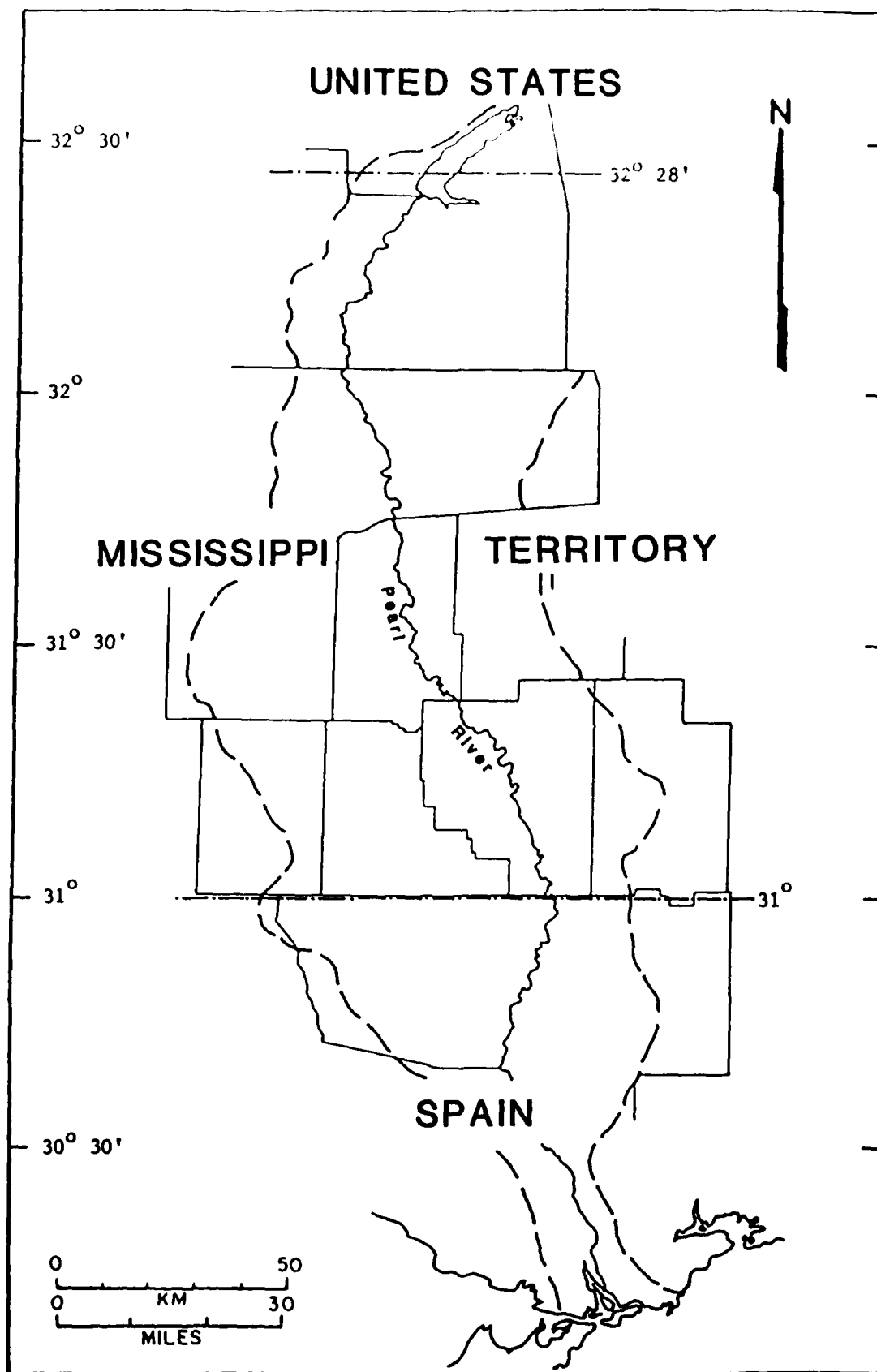


Figure 6-3. Study Area During the Spanish and American Colonial Period (1795-1810).

6.1.5.1 American Area

After the Revolutionary War, settlers began to push west of the Appalachian Mountains and settle in what are now the states of Kentucky, Tennessee and Ohio. By 1790, there were more than 1,000,000 settlers in this region who needed to reach world markets with their surplus farm products and the easiest way to reach these markets was to send the goods down the Mississippi to New Orleans and there transfer them to ocean-going ships (Davis 1959:129).

The pressure exerted by these colonists for use of the Mississippi River as a transportation route helped bring about the Pinckney Treaty. In 1795, Thomas Pinckney, the United States Minister to Great Britain, signed a treaty with Spain in which the Spanish agreed to give Americans the right to transport goods down the Mississippi River to New Orleans and there to deposit them until they could be loaded onto ocean-going ships. It also gave the United States undisputed title to all lands north of the thirty-first parallel and east of the Mississippi River (Ibid). Spain still controlled West Florida (Figure 6-3).

On April 7, 1798, according to an Act of Congress, the Mississippi Territory was established. This area included all land bounded on the west by the Mississippi River; on the north by a line to be drawn due east from the mouth of the Yasous (Yazoo) to the Chatahoochee River; on the east by the river Chatahoochee; and on the south by the thirty-first degree of north latitude (Skates 1979:54) (Figure 6-3).

When the Mississippi Territory was opened for settlement, a flood of immigrants entered the area from 1798 until 1819. This migration trend was largely due to exhausted land (tobacco planting) and the unavailability of good land in the upper south (Lowery 1968:175). Another factor was a decline, after the American Revolution, of markets for southern staples, especially tobacco and rice (Ibid:176). Probably the most important force was the rapid expansion of cotton. The invention of the cotton gin by Eli Whitney in 1793 made possible many varieties of cotton available for production (Ibid:176-177).

According to Mr. Ephraim Kirby in a letter to the President dated May 1, 1804, there were 30 families settled on the Pearl River in that year (Carter 1937:325).

Under the Treaty of Mt. Dexter on November 16, 1805, the Choctaw Indians ceded the rest of south Mississippi to the United States (Rowland 1907, Vol. 1:834-836) (Figure 6-4). This provided much additional land for settlement.

According to the Postmaster General in a letter to Judge Toulmin dated April 25, 1806, a road, "upon which there are considerable settlements, between Fort Stoddert and New Orleans" was in existence at that time (Carter 1937:461-462).

The young Frenchman Le Fleur established a very profitable trade with the Choctaw Nation and later with the westward-bound white

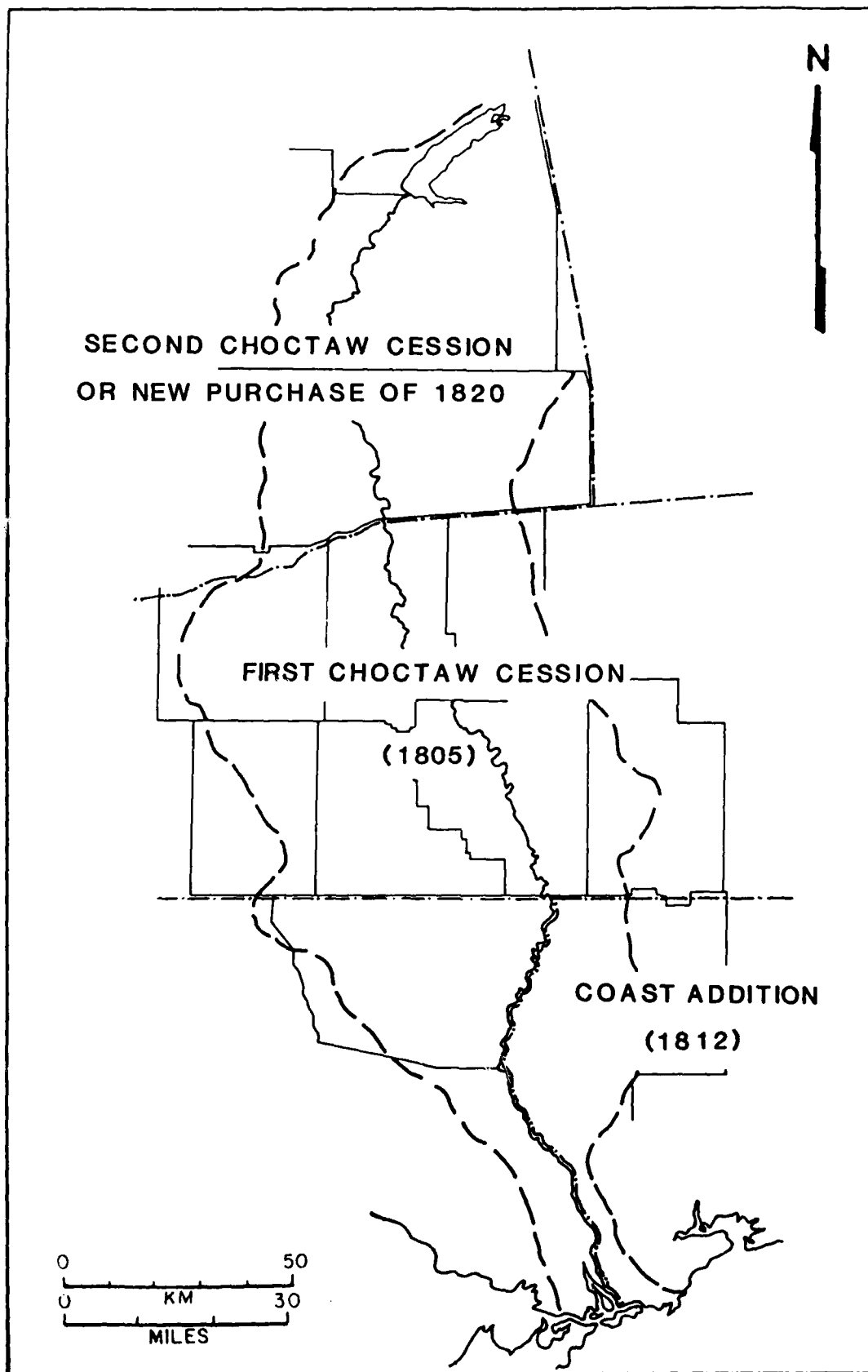


Figure 6-4. Choctaw Indian Cessions.

settlers. By 1810, Le Fleur's trading post became the focal point of the region, not only for the transaction of business, but also as a place for food and lodging. According to tradition, General Andrew Jackson, Colonel Thomas Hinds and other distinguished men of the day often ate their meals there (Robertson n.d.:3-4).

6.1.5.2 Spanish Area

In 1804, the Secretary of War of the United States wanted to build a road from Fort Stoddert (located in Mississippi) to New Orleans via the mouth of the Pearl River in what was then Creek Indian territory (Carter 1937:306). A post road from Fort Stoddert to New Orleans was established by Congress in 1805, and it was suggested that the road pass through the town of Bois-dore near the eastern mouth of the Pearl River (Ibid:444-445). This road was deemed necessary by the Postmaster General due to the "events passing on the frontier" at that time. According to him, a road was needed to insure a "certain and highly expeditious line of intelligence" between Fort Stoddert and New Orleans (Ibid:461-462).

La Fon's 1806 map of the territory of Mississippi (Appendix G) depicts a settlement on the lower Pearl River, and the name Favre is associated with it. This may be the plantation visited by Bartram in 1779, believed to belong to Simon Favre the interpreter to the Choctaw in the 1740's.

A Simon Favre, probably a son of Simon Favre the interpreter, served as land agent in granting numerous tracts of land along the lower Pearl River during the period 1809-1910, on behalf of the Spanish (Dr. Pat Galloway 1982: personal communication).

The Choctaw Indians were still an obstacle to settlement along the Pearl River in 1808. According to Edmund P. Gaines, in a letter to the Secretary of War dated April 15, 1808, there had been a skirmish between Choctaw Indians and a few white citizens (U.S.) who had moved below the National boundary on the Pearl River (Carter 1937:626).

In 1810, most of the inhabitants of that part of West Florida between the Mississippi and Perido Rivers were Americans or English. They desired a more democratic government and revolted against the Spanish in the West Florida Rebellion of 1810. They captured the Spanish fort at Baton Rouge, and organized a republic which existed for only a few weeks as the Florida parishes were soon occupied by the United States (Davis 1959:146). Following the West Florida Rebellion, all of the Pearl River belonged to the United States of America.

6.1.6 Early American Period (1810-1830)

In 1810, the entire Pearl River Basin was under the control of the United States government. The study area was now composed of the Mississippi Territory and St. Helena.

During this period, settlement increased as Louisiana and Mississippi became states. New counties/parishes were organized and other internal improvements such as roads and post offices were realized. The basic economy of the basin, however, remained that of farming, livestock and lumbering. The Pearl River continued to serve as the main artery of transportation.

Between 1810-1820, the only areas along the Pearl River which were open for non-Indian settlement were St. Tammany Parish in Louisiana and the Mississippi counties of Hancock, Marion and Lawrence. All of the lands north of this area were still under the control of the Choctaw Indians.

There had been sporadic settlement along the Pearl River in the colony of West Florida prior to 1810. However, when the United States assumed control settlers rushed in and by 1810, all of the suitable land on the Pearl River was taken. Many of the people who moved to the Pearl River area at this time were Protestants and had refused to live under a Spanish government which was Catholic (Dr. E. Russ Williams 1981:personal communication).

In the area making up the original Hancock County, more people lived along the Pearl River than in any other part. All of the land on the river had been granted to owners before 1812, while most of the interior tracts were still within the public domain (Thigpen 1965b:4).

Lands were held in West Florida by 22 different tenures, creating much confusion as to ownership. In many cases more than one person, sometimes as many as five, claimed title to the same parcel of land. The British government had granted patents to land by different agencies of that government; the Spanish had granted patents to the same lands under different conditions, some of them conflicting with one another, as had the French (Ibid:5).

The United States settled most of the disputes by refusing to recognize all of the old claims granted by the British, French and Spanish. Recognized owners were those who were living on the land and using it. They received the patents (Ibid).

Farming in most of east Louisiana during this period was confined chiefly to the lowlands adjacent to streams. Sandy ridges, hills and low, wet, marsh land lacked the natural fertility to support extensive cultivation. Since agriculture was a major economic activity during this period, the lack of fertile soils in the three east Louisiana parishes hindered population growth in the years 1810-1890 (Hickman 1966:76).

Transportation during this period was still restricted to Indian trails, the few existing roads and the Pearl River. Ferries were necessary to cross the river as bridges were virtually unknown. Two new roads (General Wilkinson's Road and the Jackson Military Road) were completed between 1812 and 1820, which facilitated travel in the area (Figure 6-5).

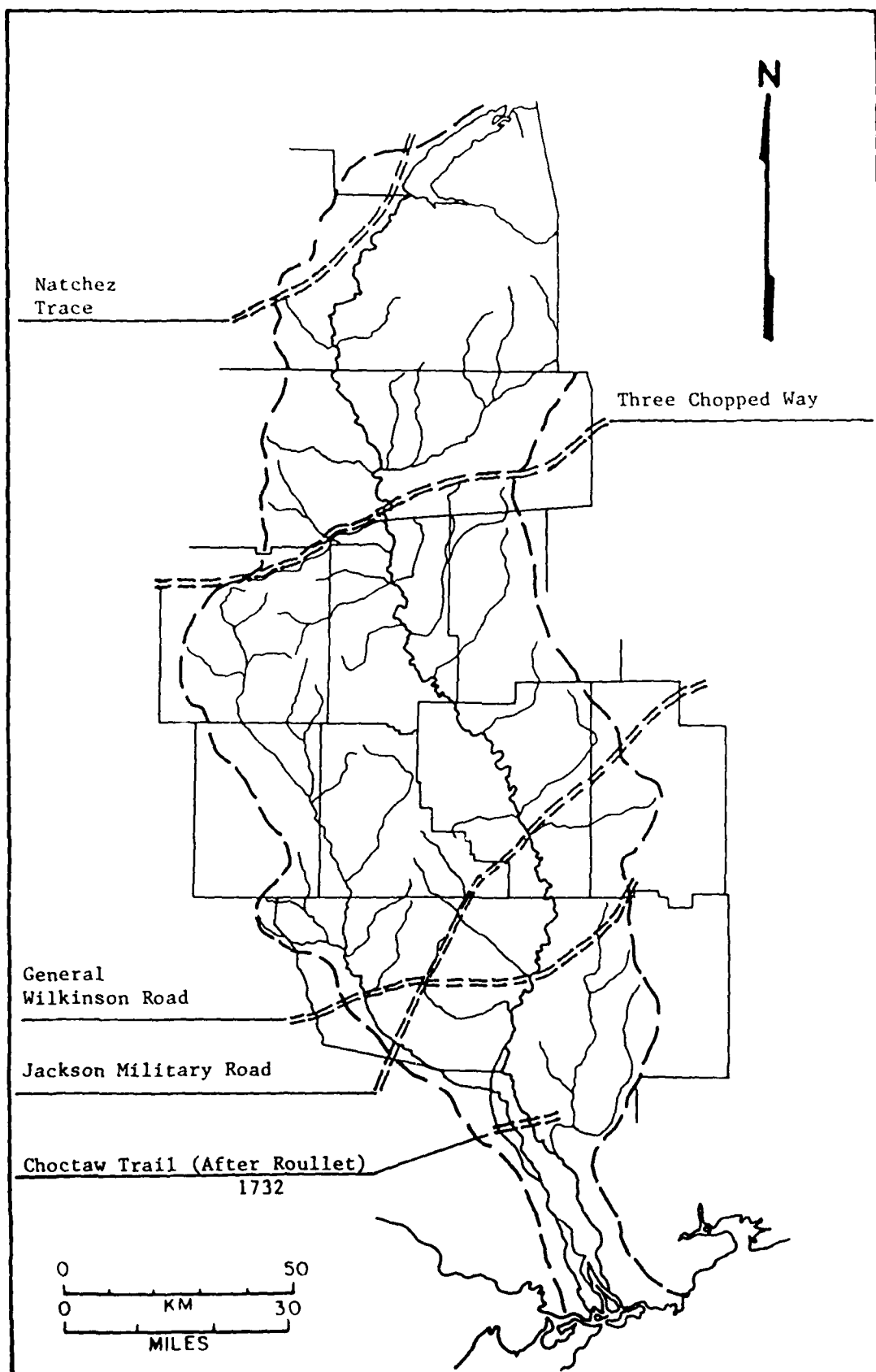


Figure 6-5. Major Roads and Trails in the Study Area.

As the steamboat had not made its appearance on the Pearl River at this time, water travel was limited to small boats such as canoes, barges, keelboats, rafts and flatboats (Robertson 1961:8-9). By 1815, rafting had become a major means of transporting timber down the Pearl River (Benham 1976:216).

Louisiana became a state in 1812 (Davis 1959:163), and received those lands lying from the Mississippi River and Orleans Parish eastward to the Pearl River and northward to the thirty-first parallel (Downs 1960:75), while the portion from the Pearl River to the Perido River went to the territory of Mississippi (Stone 1975:24).

The Pearl River assumed strategic importance during the War of 1812. General Andrew Jackson, realizing the military value of this waterway, had the mouth of the Pearl River fortified in preparation for the British attack on New Orleans.

Early post offices were often established in private residences. Probably the first post office in the Pearl River Basin was located in the home of John Ford who also operated an inn for travelers (Dr. E. Russ Williams 1981:personal communication). Ford's house was situated at a crossing of the Pearl River and served other settlements in the area. According to the Postmaster General a fortnight mail passed between John Ford's residence on Pearl River and Pinkneyville, Mississippi as early as 1813 (Carter 1938:355).

Mississippi became a state on December 10, 1817 (Skates 1979:78), placing the entire Pearl River Basin under the ownership of either the state of Louisiana or Mississippi. The East Pearl River, once the main channel, was designated as the Louisiana-Mississippi boundary (Morning Advocate, May 12, 1975).

That part of West Florida which had been added to Louisiana at Statehood, officially became the St. Helena Land District on March 3, 1819 by an act of Congress which provided for the appointment of a principal deputy surveyor for this region. The district was to be surveyed into ranges and townships and all private claims were to be connected to these (Downs 1960:85-86). Due to the large amount of claims in this sector, all surveying activities in Louisiana prior to 1819 were confined to the area west of the Mississippi River and the Isle of Orleans (Ibid:85, 89). On May 3, 1819, Congress gave patents to those settlers whose private claims could be authenticated.

The next major influx of settlement came in 1820 when the Choctaw Indians, under the Treaty of Doak's Stand, ceded part of their land to the United States government (Figure 6-4). The sudden opening and sale of these fertile lands in west-central Mississippi created a land rush which saw nearly thirty thousand people move into the Doak's Stand cession (Skates 1979:82).

The territory purchased under the Treaty of Doak's Stand was without a name and had no governing body. On February 12, 1821, the General Assembly passed an act whereby the entire territory would become one county in the state of Mississippi to be known as Hinds in honor of Major General Thomas Hinds (Robertson n.d.:7).

With the acquisition of the Choctaw Indian lands in 1820, it was decided that a centrally located capital was needed in order to better govern the growing state of Mississippi. Le Fleur's Bluff on the Pearl River was chosen as the site which was named after General Andrew Jackson, backwoods hero and architect of the Treaty of Doak's Stand. The government began operations at Le Fleur's Bluff in December of 1822 (Skates 1979:82-83).

6.1.7 The Rise of Cotton and Lumbering (1830-1861)

This was a time of rapid development for the Pearl River Basin. Cotton and timber became major industries. Steamboats made their appearance followed by the railroad. Many new towns were created and populations increased. The Pearl River continued to serve as the main artery of transportation. A great influx of settlers invaded Mississippi during the land rush of 1833-1837, the economy was drastically reduced by the Panic of 1837 and by the 1840's, the economy was again sound and rapidly increasing, only to be slowed again by the Civil War.

In the 1830's, the settlement pattern of the Pearl River Basin was primarily along the river which was reflected in the location of certain county seats. In Hancock County, for example, the courthouse was moved from Center to Gainesville sometime in the 1830's. This was due to the fact that most of the people in that county had settled along the river, and it was more convenient to have a county seat near the center of population (Thigpen 1965a:68).

It was during this period that cotton became the single most important cash crop in Mississippi and Louisiana. Between 1830 and 1832, the Choctaw and Chickasaw Indians ceded the remainder of their lands in Mississippi to the United States creating a rush of settlement and rate of growth unparalleled in the state's history (Skates 1979:18).

Spurred on by cheap land prices, easy credit and the known quality of Mississippi cotton land, farmers and planters from the older cotton states converged on Mississippi in droves bringing thousands of black slaves with them (Stone 1975:24). The slave population in Mississippi increased in the 1830's by 197 percent (Skates 1979:19). Cotton was the first money crop grown in Copiah County (Sartin 1959:47).

Settlers began to raise cotton along the Pearl River as far up as Jackson. Growers along the river would load their cotton on flat boats and carry it to the gins at Gainesville and Pearlinton. After gins were built upriver, the bales of cotton would be hauled on flat boats to the cotton buyers at the lower river towns (Thigpen 1979b).

During the middle 1830's, the combination of increased markets and new technology prompted the development and growth of forest industries. St. Tammany and Washington Parishes became major centers for timber production and grew rapidly in population, trade and industry from 1830-1860 (Hickman 1966:77). As timber became scarcer, logging activities extended further and further upriver. Logs were cut and shipped to

Logtown and Pearlinton from as far away as the Monticello and Georgetown areas (Thigpen 1979a). One of the first Pearl River lumbermen was W. J. Poitevent, who came to Gainesville, Mississippi from South Carolina in 1832 (Hickman 1966:77).

Logs, lumber and piling were not the only forest products shipped down the Pearl River. Naval stores - turpentine, rosin and tar - were also transported along this waterway (Thigpen 1979c). Other goods shipped down the Pearl River were wool, hides, cotton, beeswax, cattle (Ibid), oak staves, barrelheads and hoops for making barrels, baskets (Thigpen 1979b), brick and hogs (Thigpen 1979a).

Another important forest product was cypress shakes, used for roofing. Many of the finest old homes in New Orleans were covered with these cypress shakes which had been shipped down the Pearl River (Thigpen 1965a:178). Towns such as Tar Landing (which got its name from the fact that much tar was stored there to be shipped downriver) and Flat Landing (named for a place where flat boats tied up) sprang up as a direct result of early traffic on the Pearl River (Thigpen 1979b).

In the earliest phase of lumbering, logs had to be brought to the mills by water. Lumber going to outside markets was shipped by boat. Before the railroad, commercial lumbering would have been impossible without cheap water transportation. Logs cut on the Bogue Chitto and Pearl Rivers were floated to sawmills located on the eastern bank of the Pearl River near its mouth and the lumber sent to New Orleans in schooners (Hickman 1966:77).

The arrival of the steamboat made water transportation quicker and more efficient. Merchants depended on steamboat transportation at regular intervals to replenish their stocks. This method of delivery was faster and more convenient than wagon transportation for carrying large amounts of supplies. When steamboats began regular operation on the Pearl River, people relied on them for transportation of goods until the railroads were built connecting Jackson with the port towns on the Mississippi River (Robertson 1961:31).

The first definite record of steamboat activity on the Pearl River came in 1835, when Captain James Lathan announced in a local paper that he intended to operate the Choctaw between New Orleans and Jackson throughout the season (Ibid). Other steamboats operating on the Pearl River during this time included the Express (1836), Denmark (1838), Grand Gulf (1838) (Ibid), Caroline (1848), (Pettigrew 1979) and Ranger (1859) (Robertson 1961:31-32).

The introduction of the steam sawmill greatly stimulated the production of lumber in the Lower Mississippi Valley (Eisterhold 1972:76). As the lumber industry in the Pearl River Basin increased in importance, sawmills appeared along the east bank of the lower Pearl River. The first sawmill of any size was built at Gainesville sometime prior to 1845, and a little after 1845, a large sawmill was built at Logtown (Thigpen 1979a). In 1847, Asa Hursey was operating a steam sawmill near Pearlinton (Eisterhold 1972:78).

Although the railroad produced a tremendous effect on the economies of Louisiana and Mississippi during this period, it did little to change the lifeways of the Pearl River Basin below Jackson. The only railroads to enter the study area did so in and around the capital of Jackson. These lines did much to increase activity in Jackson and the surrounding area but provided no aid for those planters living along the Pearl below Jackson in shipping their products to New Orleans. They still had to rely on river transportation.

In 1839, there was a ferry crossing on the Pearl River near Jackson. The ferry charges were: "Foot passenger - 6-1/4 cents, man and horse - 12-1/2 cents, pleasure carriage - 25 cents, and wagon and team - 37-1/2 cents (McCain 1953:175).

The first railroad to enter the study area was the Vicksburg and Jackson line which opened regular service between these two cities in October of 1840 (Moore 1979:61). When it appeared that the line between Vicksburg and Jackson would be completed, plans were made to extend service across the Pearl River to Brandon (Ibid:69). The Jackson and Brandon Railroad and Bridge Company merged with the Mississippi and Alabama Railroad Company in 1837 and began work on extending the railroad line from Jackson to Brandon. These companies lost money during the Panic of 1837 and their charter was revoked halting work on the new line (Ibid:70).

In 1846, the legislature issued a charter of incorporation to the Southern Railroad Company with the authority to construct a line from Jackson to the Alabama state line. Their charter was also revoked and the state of Mississippi assumed possession of the Brandon railroad. Under the auspices of the state, the line was completed, a bridge built over the Pearl River and regular services established by 1850 (Moore 1979:71-72). Later in the year of 1850, the charter was reissued to the Southern Railroad Company and they assumed ownership of the line from Jackson to Brandon (Ibid:72).

The other railroad to pass through the study area was the New Orleans, Jackson and Great Northern which was billed as the railroad which would make New Orleans the commercial emporium of the South. The New Orleans, Jackson and Great Northern became the premier rail project in ante-bellum Louisiana (Burkhardt 1975:6).

In April of 1858, the new line reached Jackson, Mississippi, where it joined the already completed line between Canton and Jackson (Moore 1979:80). The rolling stock of this line prior to the Civil War consisted of 49 locomotives, 37 passenger cars (many of which had never been used) and 550 freight, baggage and gravel cars (Burkhardt 1975:6).

The Great Northern railroad was completed too late to be of great economic significance to central and north Mississippi during the era of slavery, but was to be of overwhelming importance during the Civil War (Moore 1979:80).

6.1.8 Civil War (1861-1865)

Despite the general lack of hostilities along the Pearl River, the effect of the War was realized throughout the Pearl River Basin. Local and state governments became unstable and often powerless to enforce the laws; sugar, cotton and other crops could not be sold; banks did not have money to lend and merchants could not afford to extend credit; ordinary manufactured goods could not be found. Many of the slaves refused to work or ran away from farms and plantations so that crop production decreased. Much of the labor had to be performed by women and children, since most of the men were in the army (Davis 1959:218). Wartime destruction of physical facilities - buildings, railroads, towns and villages was enormous (Skates 1979:108).

The economy of the area came to a virtual standstill as a result of the war. In Mississippi, there were almost no railroads in operation or post offices carrying on their normal functions. Newspapers were in operation only in isolated areas (Garner 1901:122).

Most of the armed conflict occurred in and around strategic centers such as New Orleans and Jackson. Jackson, Mississippi was considered so vital to the interests of the South that it was burned by Union Forces. The destruction was so complete that it became known as "Chimneyville" (Skates 1979:108). Georgetown, on the Pearl River, was also burned by Federal troops. It was completely destroyed in 1863, and since that time has been moved further inland (Sartin 1959:29).

Major transportation routes such as the railroad were indispensable to the Confederacy and became prime targets for the Union army. The New Orleans, Jackson and Great Northern Railroad, for example, was taken over by the Confederate Army on April 24, 1862 (Prichard 1947:1137), and used to deploy men and supplies until 1863, when the rail connection at Jackson was destroyed by General Grant's army (Burkhardt 1975:6-7).

In 1863, Colonel Benjamin H. Grierson, of the Sixth Illinois Cavalry, with a force of approximately 1,700 men, passed through Simpson County. Grierson's mission was to divert the attention of the Confederate army from General Grant who was crossing the Mississippi River below Vicksburg (Bennett 1962:79).

On the 27th of April, 1863, Grierson's troops came to the Pearl River and captured the ferry and landing (location not given). A courier, bearing intelligence of the approach of the Yankees and orders for the destruction of the ferry, was also captured (Ibid).

The towns of Gainesville and Pearlinton were also captured by Federal troops. They had intended to use the Pearl River as a transportation route for supplies, however, their lack of knowledge and experienced pilots caused them to abandon the idea as their only attempt was aborted when their gun boat struck an obstruction, where the Wabash Bayou flows into the Pearl, and sank (Thigpen 1965b:95).

The paralyzing of the economic growth of the Pearl River Basin, especially in the cotton and lumber industries was the main effect of

the Civil War on the study area. According to Hickman (1966:79), for example, the forest industries of eastern Louisiana were severely affected by the Civil War. Five years after the end of the war, there were fewer sawmills in east Louisiana than in 1850.

6.1.9 Reconstruction (1865-1877)

Reconstruction was a bleak time for the South. Generally speaking, farms had gone to ruin, livestock had drifted away or been taken as spoils of war. Most businesses had been closed down and the currency was very unstable. Much of the burden of reconstruction was placed on the return of the railroads.

The United States Government made many of the decisions concerning how the southern states were to go about the process of Reconstruction. Congress, for example, enacted the Homestead Act in June of 1866 which restricted all remaining public lands in five southern states to entry for homestead only. This act was designed to provide lands for freedmen and loyal whites. Homesteading rights were restricted to these classes exclusively until January 1, 1867.

The New Orleans, Jackson and Great Northern Railroad again assumed a major role - this time in aiding reconstruction efforts of the South. On June 24, 1865, the line was back in operation (Burkhardt 1975:7), and by the end of 1866 regular passenger trains were making the 206 mile run between New Orleans and Canton, Mississippi in 13 hours (Ibid:9).

An important new railroad in Reconstruction Louisiana was the New Orleans, Mobile and Chattanooga. This railroad received a charter from the state of Louisiana Legislature in 1868 and was completed from Mobile to New Orleans in 1870. In 1871, the Louisiana Legislature authorized a change in the company's name to the New Orleans, Mobile and Texas Railroad (Ibid:53-56).

The first steamboat to operate on the Pearl River after the Civil war was the Steadman which ran about 1870 (Pettigrew 1979). Also about 1870, the biggest mill in the area was built at Pearlington (Thigpen 1979a). In 1871, a cotton and woolen mill was established at Wesson in Copiah County (Rowland 1907, Vol. 1:564-565).

A sudden decline and almost complete stop of steamboat traffic along the Pearl River is attributed by H. C. Collins to a great flood on the Pearl in 1874. The flood destroyed many homes and nearly all of the farming land on both sides of the river causing the inhabitants to abandon the river (Flagler 1913:3-4).

In April of 1874, the New Orleans, Jackson and Great Northern Railroad, the Mississippi Central and the Southern Railroad Association consolidated into the New Orleans, St. Louis and Chicago Railroad (Burkhardt 1975:20). In 1876, the New Orleans, Mobile and Texas Railroad was required to maintain a drawbridge over the Pearl River (location not given) (Rowland 1907, Vol. II:508). At the end of Reconstruction, the Alabama and Great Southern Railroad, in 1877, began operations (Rowland

1907, Vol.II:512). This line crossed the Pearl River in St. Tammany Parish into Pearl River County, Mississippi and extended to Meridian, Mississippi and into Alabama.

Reconstruction saw its share of swindlers trying to get their cut of the money appropriated by the government to help get the South back on its feet. One such plot was the Pearl River Scheme. Several members of the legislature organized the Pearl River Navigation Company and induced the legislature to give them certain lands which had been set aside by the government for the purpose of schools and the improvement of navigable streams. The Pearl River Navigation Company promised to remove all obstructions from the Pearl River and otherwise improve its navigable condition in consideration of these lands. The Governor approved the bill without taking the proper bonds and securities that the service would be carried out. The company sold about 105,000 acres of land and used the money without removing a single snag from the river (Garner 1901:326-327).

6.1.10 Industrial Period (1877-1905)

During this period both the Pearl River and the railroad were involved in transporting goods to market. Cotton declined in importance while lumber became a major industry in the basin. Although no new major railroad lines were constructed through the study area, short lines, or trunk lines, appeared which were designed to transport products from collection areas to the river for transportation to major markets.

In March of 1879, an examination was made of the Pearl River from Jackson, Mississippi to the mouth of the Rigolets, Louisiana in order to determine the amount of work necessary to improve the river for commercial boat traffic. Based on the examination, a project was adopted in 1880, which provided for a channel five feet deep from Jackson to the mouth, at an estimated cost of \$95,940. The project was found impracticable to obtain this depth and was modified in 1885 to provide for a channel two feet deep at an estimated cost of \$145,940 (Flagler 1913:4).

Lumbering was especially important in Louisiana during this period. In the 1880's, for example, pine longleaf forests in the East Louisiana pine country constituted 75 percent or more of a total land area of over 1,500,000 acres (Hickman 1966:77). Large-scale industrial lumbering began in Louisiana during this time (circa 1880) with the advent of the assault upon the pine forests of the state (Mancil 1969:14).

The Army Corps of Engineers began maintenance and improvement of the Pearl River channel in 1880 (Morning Advocate, October 25, 1953). In spite of Civil War obstructions on the Pearl River and the great flood of 1874, commerce on the river reached its peak in 1895 (Romero 1968). During the early 1900's, the government subsidized snagboats through the Army Corps of Engineers. These boats pulled treacherous snags from the river and dredged sand from the channel. The snagboats operated during the summer and riverboats carried commercial goods on the river in the winter (Pettigrew 1979). By the turn of the century, the United States

Army Corps of Engineers snagboat, Pearl, ceased operating on the river above Rockport in Copiah County. By 1916, snagboats, due to the influence of the railroad, became obsolete and were discontinued on the Pearl River (Thigpen 1980).

Pearlington was for many years one of the most important lumber centers in the United States, and one of the most important commercial centers in south Mississippi. The Poitevent and Favre Lumber Company was the main reason for Pearlington's success (Thigpen 1965b:66). The company was organized shortly after the Civil War with Captain John Poitevent as president and Captain Joseph A. Favre as vice-president. They supplied lumber crossties, piling and timber to build the Louisville and Nashville Railroad. They also sold bricks and sand and did a world-wide business shipping lumber to many ports until 1906 (Ibid:67).

When the timber began to play out in the early 1900's, the big mill at Pearlington, reputed to be the largest in the world, closed down. By the time the Pearlington mill shut down, the mill at Gainesville had already closed (Thigpen 1979a).

The establishment of large mills was due largely to two factors. First, east Louisiana possessed timber of superior quality which was concentrated in contiguous blocks and, second, the title to most of the virgin timberlands had been acquired by only a few owners (Hickman 1966:81).

The concentration of ownership made it easy for mill owners to buy acreages in blocks sufficiently large to justify the expenditures for a large mill and related equipment. The Great Northern Railroad, for example, acquired more than 250,000 acres in Washington and St. Tammany Parishes and Poitevent and Favre owned 100,000 acres or more in St. Tammany Parish (Ibid).

In the early 1900's, Henry Ingle Caldwell of Freeny operated the first gasoline-powered boat on the Pearl which was called Belle of the Bends. Caldwell transported cotton, cotton seed and corn downriver to Jackson and returned to Carthage, Mississippi with flour, sugar, molasses and other merchandise. Crew members sounded a trumpet as they approached landings so that persons having goods to be transported on the boat could flag them. Caldwell's boats, traveling at a rate of about 10 miles per hour downstream and four upstream, carried a cargo of up to 20 tons. Caldwell and his crew could make the trip from Carthage, Mississippi downriver to Jackson in a day, but the trip back up the crooked river with a heavy cargo usually took three days. The Belle of the Bends hit a cypress snag at Buzzard Roost Bend near Madison Station and sank with its load of farm produce in 1904 (Pettigrew 1979).

The City of Demopolis was one of the largest steamboats operating on the Pearl River. It had six bedrooms, space for cooking and eating, storage areas and a large deck for freight. This steamboat hit a snag and sank in Holmes Bayou in 1903 (Marion County Historical Society 1976:154).

By 1905, the advent of the first railroad line in St. Tammany Parish had spelled doom to river transportation with the exception of the floating and rafting of logs to mills near its mouth (Romero 1968). Commerce on the Pearl River from Bogalusa, Louisiana to Columbia, Mississippi consisted almost entirely of logs and timber during the period 1905-1912 (Black 1913:3).

An examination of the Pearl River was made in 1906 from Rockport, Mississippi to its mouth. This examination led to fixing the head of improvement at Rockport, as a fixed bridge at that point had been built under an act of Congress of April 21, 1900, and the estimate for completion was then placed at \$100,000 (Flagler 1913:4).

6.1.11 Modern Period (1905-Present)

During this period highways became important transportation routes with the advent of the automobile. The railroad assumed the major role in transportation of products to markets, commerce on the Pearl River virtually ceased and the lumbering industry continued to be important with the emergence of several major lumbering centers.

In 1907, four railroads entered the city of Jackson, Mississippi. They were: the Illinois Central, the Yazoo and Mississippi Valley, the Alabama and Vicksburg and the Gulf and Ship Island (Rowland 1907, Vol. 1:952).

The first steps toward systematic road construction in Louisiana were taken in 1909 when state convicts were used for road improvement. This idea was so successful that the State Highway Department was created in 1910. Soon after the organization of the Highway Department, it was realized that the construction of state highways should be undertaken in a systematic manner and with some concrete objectives in mind. The plan was to connect each parish with the parish seats and principal trade centers to adjoining parishes (Kerr 1919:68).

On July 25, 1912, the River and Harbor Act provided funds for a preliminary examination of Pearl River from Bogalusa, Louisiana to Columbia, Mississippi in order to ascertain the condition of the river for commerce (Rossell 1913:1-2).

A few years before 1913, the merchants of Columbia purchased a steamboat for the purpose of making regular trips between New Orleans and Columbia on the Pearl River. This boat developed a good business but was soon discontinued. The competing railroads had agreed to reduce their freight tariffs provided the merchants of Columbia discontinued the river traffic. Since that time, however, the merchants and farmers became dissatisfied with the facilities offered by the railroads and there was a movement to revive river traffic (Flagler 1913:5).

The building of railroads was, without doubt, the reason regular traffic was not continued on the Pearl River. Spasmodic efforts to revive river traffic were made in the early 1900's, but without apparent success. In 1913, there were no regular packets or steamboats on the

river from the mouth to Rockport, although four gasoline passenger and freight boats were making regular trips from Jackson upstream when the river was navigable (Ibid).

In 1913, there were no terminal facilities on the Pearl River other than mere landing places on the open bank. Commerce was limited to rafting of logs and timber and towboats towing barges with loads of sand and gravel, railroad cross-ties, staves and naval stores to the mouth of the river to New Orleans and Gulfport, Mississippi (Ibid).

In 1913, the existing project for improvement of the Pearl River provided for securing a channel two feet deep at mean low water from Rockport to the mouth, a distance of 243.8 miles, by removal of snags and sunken trees from the river and overhanging trees from the banks. As any improvement to be of value must provide a water outlet to the Gulf, the District Officer recommended that a survey be made of the Pearl from Columbia to Bogalusa, and from there to the Gulf. At that time (1913), the section of river between Bogalusa and Columbia was considered as unworthy of improvement (Rossell 1913:2).

In 1914, Louisiana led the nation in lumber production (Burns 1979:197). The Great Southern Lumber Company became the largest pine sawmill in the world and gave birth to the city of Bogalusa on July 4, 1914 (Romero 1968). The Pearl River bridge at Bogalusa was built in 1915 at a cost of \$7,500 (Quick 1946:174).

During the 1920's, graveled roads spread over the state of Louisiana and Governor Parker became known as the "Gravel Roads Governor." Most public highways in Louisiana were maintained locally until the administration of Governor J. Y. Sanders during which time the first graveled highways were constructed. Later, Governor Huey P. Long launched a program to hard-surface main highways and build bridges (McGinty 1949:10). A new drawbridge was built over the Pearl River at Bogalusa in 1921 (Quick 1946:174-175).

Due to the influence of the railroad, shipping on the Pearl River decreased, and the Corps of Engineers abandoned maintenance and improvement of the Pearl River Channel in 1922 (Morning Advocate, October 25, 1953).

In the 1920's bus service began to appear for the first time. In 1927, for example, service from Bogalusa to other points started.

In 1933, Willie Favre (known locally as "Rattlesnake Bill" Favre) was living in a "Saddle-bag" type house on the east bank of Mulatto Bayou in Hancock County (Chambers 1935:41). According to Chambers (Ibid), Bill Favre was able to recount stories of the period immediately following the Civil War. It is likely he was a son of Joseph Favre, the vice-president of the Poltevant and Favre Lumber Company mentioned above.

The Federal Government had been involved intermittently in Pearl River affairs since 1880. Now the River and Harbor Act of 1935 gave the

United States Army Corps of Engineers the task of making the Pearl navigable (Ibid 1968:167, 169). High cost of rail rates was another factor behind the push to revitalize the Pearl as a transportation route, and a barge canal project was designed by the Corps of Engineers in 1936 and completed in early 1950's (Ciko 1977). In 1938, snagboats belonging to the war Department were working the Pearl River dredging and cutting the bends (Quick 1946:173).

The Pearl River area ceased to be dominated by agriculture and forestry after World War II. Many of the former black sharecroppers left the region for better economic opportunities in the cities. Today, little evidence of the plantation or tenant systems can be seen along the Pearl River. The major area of growth in the Pearl River Basin is centered around the city of Jackson. Today, Jackson is encroaching on the western limits of the project area and numerous communication corridors (railroad bridges, highway bridges and utility lines) cross the study area.

7. RESULTS

RESULTS OF THE LITERATURE/BACKGROUND SEARCH

General data recovered during the background search have been incorporated into the preceeding sections of this report.

7.1 Cultural Resources Surveys

Surveys dealing with both prehistoric and historic cultural resources have been conducted in the Pearl River Basin.

7.1.1 Archeological Surveys

A total of 31 archeological surveys have been conducted within the Pearl River Basin; 16 of these, at least in part, were in the study area (Table 7-1). Most of these assessments were small area surveys with virtually all of the documentation existing in the form of letter reports. No large-scale surveys have been conducted along the Pearl River south of Ross Barnett Reservoir.

7.1.2 Historical American Buildings Surveys (HABS)

No buildings in the study area have been recorded by the Historical American Buildings Survey.

7.1.3 Parish Development Board Surveys (Louisiana)

No surveys were conducted in St. Tammany and Washington Parishes.

7.1.4 State Architecture Surveys

A statewide survey of Mississippi was initiated in 1969, and is ongoing. A total of 15 sites, all on the National Register of Historic Places, have been recorded as a result of this survey. None of the counties in the study area has been completely surveyed at this time.

An architecture study of the state of Louisiana, begun in 1974, is ongoing. None of the parishes in the study area has received any attention at this time.

7.1.5 Bridge Surveys

A bridge survey was conducted by the Department of Transportation and Development, Baton Rouge, Louisiana from 1979 through 1980. All of the bridges in the state were recorded and categorized. Bridges in the study area are depicted in Table 3-1.

In 1980, the Division of Archeology and Historic Preservation, Baton Rouge, Louisiana initiated an ongoing survey designed to locate and record the most significant bridges in the state in terms of their

TABLE 7-1

ARCHEOLOGICAL SURVEYS CONDUCTED
IN THE STUDY AREA

SURVEY	COUNTY/ PARISH	U.S.G.S. MAP	SITES RECORDED (IN STUDY AREA)	DOCUMENTATION
Mississippi Geological Survey	Hancock	English Lookout	22Ha515	Wailes 1854
Mississippi State Survey	Hancock	English Lookout	22Ha500, 22Ha506, 22Ha507	Chambers 1935
Pearl River Reservoir	Hinds, Madison, Rankin	Madison	22H1510, 22H1512, 22Ra502, 22Ra508, 22H1546	Rands 1958a
Yazoo Basin and Hinds County Survey	Hinds	Terry Florence	22H1526, 22H1527	Connaway and McGahey 1973
Brashear Creek Basin Sewer Project	Madison	Madison (sur- vey area not shown on map)	None	McGahey 1973
Byram Indus- trial Park	Hinds	New Byram	22H1556, 22H1557	Newsom 1975
Four Proposed Construction Sites in George and Pearl River Counties, MS	Pearl River	Nicholson (survey area not shown on map)	None	Wynn 1975
Two Bridge Crossings (I59 and I10) over the East and West Pearl Rivers, LA	Hancock, Pearl River, St. Tam- many	Haaswood, Nicholson (survey area not shown on map)	None	Shenkel 1975
An Archaeo- logical Site Survey of Four Proposed Pipe- line Construc- tion Sites in Louisiana	Wash- ington	Bogalusa	None	Marshall 1976

TABLE 7-1
(Continued)

Proposed Additional 2 Lanes To U.S. Hwy. 98 Between the Walthall and Lamar County Lines, Marion County	Marion	Columbia South	None	Hyatt 1977b
Three Proposed Bridge Replacements on MS. Hwy. 587 Between Columbia and Morgantown, Marion County	Marion	Columbia South (survey area not shown on map)	None	Hyatt 1977c
Proposed Bank Protection at Pearl River Bridge on U.S. Hwy. 84 East of Monticello, Lawrence Co.	Lawrence	Monticello (survey area not shown on map)	None	Hyatt 1977e
Magnetometer Survey of a Portion of the Pearl River	Pearl River	Bogalusa	1 possible shipwreck	Floyd 1978
Survey of 25 Acre Tract in Lot 83, Port Bienville Industrial Park	Hancock	English Lookout (survey area not shown on map)	3 sites reported (not confirmed)	Greenwell 1979
Surface Inspection of the Claiborne Site and Areas to be Impacted by the Port Bienville Industrial Park	Hancock	English Lookout	None	Howell 1979a
Copiah Creek Watershed	Copiah	Georgetown	None	Hyatt 1980

architectural and historical importance. No bridges in the study area have been studied at this time.

In 1980, a comprehensive bridge survey of Mississippi was initiated by the Mississippi Department of Archives and History, Jackson, Mississippi. This survey was designed to record all bridges in the state built before 1930. At the present time only state-maintained bridges have been recorded and none is in the study area.

7.1.6 Log Cabin Surveys

A survey of standing log houses in the Florida Parishes was conducted during the summer of 1980. At this time the report is still in preparation (Dr. Jay Edwards 1982: Personal Communication).

7.1.7 Shipwrecks

A survey of shipwrecks in the United States was conducted by Berman (1972). Only one wreck in the Pearl River is recorded (Ibid:165). According to Berman (Ibid), the Dove (steam side wheeler) snagged in the Pearl River in 1866 and sank. This ship weighed 176 tons and was built in 1856. A magnetometer survey of a portion of the Pearl River was conducted by Floyd (1978). Two anomalies were recorded, however, only one may be associated with a shipwreck. Additional shipwrecks have been reported through newspaper articles, however, they have not been located at this time.

7.2 Cultural Resources

Both prehistoric and historic sites have been documented in the Pearl River Basin.

7.2.1 Prehistoric Sites

A total of 39 sites with state numbers are located in the corridor (Table 7-2). Two areas, 1) Jackson Landing District (NRHP1) and 2) Mill Creek (NRHP15), are listed in the National Register of Historic Places (Table 7-3). These sites are described in Appendix J.

There is some confusion as to the number and location of sites within the Jackson Landing District. According to the NRHP Inventory Nomination Form, the Ancient Earthwork Fortification Site (22Ha515) and the Jackson Landing Site (22Ha504) are found within the boundaries of this district. Site 22Ha504, however, is not plotted on MDAH maps and its exact location can not be ascertained.

The Mulatto Bayou Site (22Ha500) (Richard Marshall 1981:personal communication) may be within this district. However, it is not plotted on MDAH maps and according to MDAH records, is located outside the boundaries of this area.

TABLE 7-2

ARCHEOLOGICAL SITES IN THE STUDY AREA

SITE NO.	SITE NAME	OTHER NO.s	OTHER NAMES	CULTURAL AFFILIATIONS	REFERENCE MAPS	SITE TYPE
22Cp516	Dry Creek	-	-	Paleo; Archaic; Baytown	Hopewell	campsite
22Cp517	-	-	-	Paleo	Hopewell	campsite
22Cp519	Little Lake	-	Wallace #3	-	Hopewell	-
22Cp520	Reno Creek #1	-	Wallace #1	Paleo; Archaic	Hopewell	-
22Cp521	Reno Creek #2	-	Wallace #2	Mid-Archaic	Hopewell	-
22Cp522	Allen Lake #1	-	Wallace #4	-	Hopewell	-
22Cp523	Allen Lake #2	-	Wallace #5	-	Hopewell	-
22Cp524	Brushy Creek #1	-	-	Baytown	Hopewell	possible mound
22Ha500	Mulatto Bayou	-	Gistang Point	Post-Archaic;	Eng. Lookout	shell midden
22Ha501	Claiborne	Hc35	-	Baytown	Eng. Lookout	shell midden
22Ha504	Jackson Landing	-	-	Poverty Point; Tchefuncte	Eng. Lookout	shell midden
22Ha506	Cedarland Plantation	-	-	Tchefuncte; Marksville	Eng. Lookout	shell midden
22Ha507	Weston Midden	-	Coco Hill Mounds; Clifton Site	Late Archaic	Eng. Lookout	shell/earth midden
22Ha515	Ancient Earthwork Fortification	-	Jackson Landing Mulatto Bayou	-	Haaswood	shell midden
22H1510	Westbrook	H112, 516	-	Historic; Mississippian; Tchefuncte; Marksville	Eng. Lookout	shell midden; mound earthwork; mound
22H1512	Wills	H114	-	Post-Archaic	Jackson, SE	mound, village
22H1526	Berry Mound	-	-	Poverty Point; Mississippian; Tchefuncte	Jackson	campsite
22H1527	Hanging Bridge	-	-	Woodland	Terry	mound
22H1556	Big Creek #1	-	-	Woodland	Florence	-
22H1557	Big Creek #2	-	-	-	New Byram	-
22H1562	Railroad	-	-	-	New Byram	-
22H1563	Bailey Hill	-	-	-	Jackson	-

TABLE 7-2
(Continued)

SITE NO.	SITE NAME	OTHER NO.s	OTHER NAMES	CULTURAL AFFILIATIONS	REFERENCE MAPS	SITE TYPE
22Lw500	Sauls Mound	LW10 UM500	Tilton Mounds	Post-Archaic	Tilton	mounds
22Lw504	Section 1	-	-	-	Tilton	-
22Lw511	M111 Creek	22Lw 510	W. D. Clark	Mississippian	Tilton	mounds and ceremonial center
22Lw514	White	-	-	Archaic/Mississippian	Monticello	-
22Lw515	Spence	-	-	Archaic	Monticello	-
22Pr500	Bonner Place	PR-1	-	Post-Archaic	Nicholson	village
22Ra502	Flowood #1	U of M 502 RK-2	-	-	Jackson	-
22Ra504	Spann	U of M 504 Ra-5 R-5	-	Post-Archaic	Madison	mound
22Ra508	Mule Jail	U of M 508 RA-9 RK-9	-	-	Jackson, SE	-
22Ra524	-	-	-	Post-Archaic	Jackson	-
22Ra527	Interstate Bridge	-	-	Post-Archaic	Jackson	-
22Ra528	-	-	-	Post-Archaic	Jackson	midden
22Ra546	Flowood #2	RA-3 RK-3	-	-	Jackson	-
22S1510	Berry	-	-	Archaic	Hopewell	-
16WA8	-	-	-	Mississippian	Poplarville	shell midden
16WA10	Ford	-	-	-	Bogalusa	village
16WA12	Adams Arrowhead Field	-	-	-	Bogalusa	-

TABLE 7-3

NATIONAL REGISTER OF HISTORIC PLACES SITES IN THE STUDY AREA

SITE NUMBER	SITE NAME	TEMPORAL PLACEMENT	REFERENCE MAPS	SITE TYPE
NRHP1 (22Ha515)	Jackson Landing	Prehistoric (Archaic, Post-Archaic) Historic	English Lookout	earthwork shell midden temple mound
NRHP2	Bailey Hill Civil War Earthworks	Historic (19th Century)	Jackson	Military earthworks
NRHP3 (28-049-004-0019)	Boyd House	Historic (19th Century)	Jackson	Greek Revival Residence
NRHP4	Capitol Green	Historic (19th Century)	Jackson	Area designated for public buildings
NRHP5 (28-049-004-0030)	Central Fire Station	Historic (20th Century)	Jackson	Fire Station
NRHP6 (28-049-004-0123)	Edwards Hotel	Historic (20th Century)	Jackson	Hotel
NRHP7 (28-049-004-0031)	Governor's Mansion	Historic (20th Century)	Jackson	Government Building
NRHP8 (28-049-004-0073)	City Hall	Historic (19th Century)	Jackson	Government Building
NRHP9 (28-049-004-0219)	Smith Park Architectural District	Historic (19th & 20th Century)	Jackson	Architectural District
NRPH10 (28-049-004-003)	Millsaps-Buile House	Historic (19th Century)	Jackson	Victorian Residence
NRHP11 (28-049-004-089)	The Old Capitol	Historic (19th Century)	Jackson	Government Building

TABLE 7-3
(Continued)

SITE NUMBER	SITE NAME	TEMPORAL PLACEMENT	REFERENCE MAPS	SITE TYPE
NRHP12 (28-049-004-0197)	Smith Robertson Elementary School	Historic (20th Century)	Jackson	School Building
NRHP13	Spengler's Corner	Historic (19th Century)	Jackson	Commercial Building
NRHP14 (28-077-010-0022)	Longino House	Historic (19th Century)	Monticello	Residence
NRHP15 (22LW511)	Mill Creek	Prehistoric (Mississippian)	Tilton	Mound complex

In the entire Pearl River Basin (south of the Ross Barnett Reservoir), a total of 328 archeological sites have been recorded. These sites are described in Appendix L.

7.2.2 Historic Sites

A total of 15 historic sites have been recorded in the study area (Table 7-3). All of these sites are listed in the National Register of Historic Places and are described in Appendix J. A total of 43 sites containing historic components have been recorded within the Pearl River Basin (Appendix L).

7.2.3 Possible Sites

A total of 26 possible site locations are plotted on the maps at the Mississippi Department of Archives and History, the University of New Orleans, the Division of Archeology and Historic Preservation, Baton Rouge, Louisiana State University and the Cobb Institute, Starkville. These areas, designated as PS1 - PS26, are described in Table 7-4.

TABLE 7-4

POSSIBLE SITE LOCATIONS IN THE STUDY AREA

SITE NO.	REFERENCE MAP	TEMPORAL PLACEMENT	COMMENTS
PS1	Georgetown	Not known	Open circle on MDAH quad. No additional information is available.
PS2	Haaswood	Not known	Open circle on SHPO (Baton Rouge) quad. No additional information is available.
PS3	Haaswood	Not known	Open circle designated as ST40 on SHPO (Baton Rouge) quad. There is no site form for this site. It is apparently a duplicate number.
PS4	Hopewell	Not known	Open circle on MDAH quad. No additional information is available.
PS5	Monticello	Not known	Open circle on MDAH quad. No additional information is available.
PS6	Monticello	Not known	Open circle on MDAH quad. No additional information is available.
PS7	Monticello	Not known	Open circle on MDAH quad. No additional information is available.
PS8	Monticello	Not known	Open circle on MDAH quad. No additional information is available.
PS9	Monticello, NE	Not known	Open circle on MDAH quad. No additional information is available.
PS10	Sun	Not known	Open circle on SHPO (Baton Rouge) quad. No additional information is available.

TABLE 7-4
(Continued)

SITE NO.	REFERENCE MAP	TEMPORAL PLACEMENT	COMMENTS
PS11	Poplarville	Prehistoric	Area where Robert Neuman (1981:personal communication) believes a site exists.
PS12	Tilton	Not known	Open circle on MDAH quad. No additional information is available.
PS13	English Lookout	Not known	Open circle designated as UN010 on University of New Orleans quad. No additional information is available.
PS14	English Lookout	Not known	Open circle designated as UN09 on University of New Orleans quad. No additional information is available.
PS15	English Lookout	Not known	Open circle designated as HN9 on SHPO (Baton Rouge) quad. No additional information is available.
PS16	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) believes a site to exist.
PS17	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) believes a site to exist.
PS18	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) remembers a shell midden is located. This site may be the same as 22Ha504.

TABLE 7-4
(Continued)

SITE NO.	REFERENCE MAP	TEMPORAL PLACEMENT	COMMENTS
PS19	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) remembers a shell midden. This site, a possible extension of PS18, may be the same as 22Ha504.
PS20	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) believes a site to exist.
PS21	English Lookout	Not known	Open circle designated as UN035 on University of New Orleans quad. No additional information is available.
PS22	English Lookout	Not known	Open circle designated as UN030 on University of New Orleans quad. No additional information is available.
PS23	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) believes a site to exist.
PS24	English Lookout	Prehistoric	Area where Richard Marshall (1981:personal communication) believes a site to exist.
PS25	Jackson	Not known	Open circle or MDAH quad. No additional information is available.
PS26	Jackson	Not known	Open circle labelled "shell" on MDAH quad.

8. INTERPRETATIONS

8.1 Prehistoric Sites

8.1.1 Cultural Sequence

The period(s) of occupation of the sites recorded in the study area has been derived from temporally diagnostic artifacts (projectile points and ceramics, etc.). These data have been collected primarily through surface collecting. Of the 39 sites in the study area, only six have been excavated. Two of these received only a single test pit.

There exists a problem of how many recorded sites are valid. According to official site forms, only 12 of the 39 sites were visited and recorded by professionals. At least four sites have been recorded solely on the basis of artifacts in private collections. Six of the site forms give no mention of artifacts and four do not offer any information as to the recorder.

The prehistory of the study area, when based on information gleaned from recorded sites, is virtually unknown. Of the 39 recorded sites, only 12 have been classified according to specific time periods. Fifteen sites can only be placed in broad categories (e.g. Post-Archaic) at this time and 12 cannot be classified without further investigation (Table 7-2).

8.1.1.1 Paleo-Indian Period

This represents one of the least known periods in the prehistory of the study area. According to MDAH site forms, only three recorded sites contain Paleo-Indian components. Two sites have been designated Paleo-Indian on the basis of projectile points in private collections. One site, 22Cp516, was recorded by a professional (Penman 1977:199-203). The site was considered Paleo-Indian on the basis of two Clovis points (in a private collection), one Wheeler point and several large flakes believed by Penman (Ibid:199) to be representative of a Paleo-Indian tool kit.

There are three factors which might explain the low number of Paleo-Indian sites recorded in the study area at this time. The first is a sampling bias. If the Paleo-Indian period is represented by sites in a particular study area, the sampling method employed could easily miss this type of site. Second, Paleo-Indian artifacts are highly valued by relic collectors and would be sought after, thus removing them from the sites. Finally, deposition of recent alluvium during the last 6000 years precludes locating Paleo-Indian sites in some areas during a surface survey.

8.1.1.2 Archaic Period

According to MDAH site forms, seven recorded sites in the study area have been classified as Archaic. Early, Middle and Late Archaic components have been recognized in sites in the study area. Based on a

cache of 10 Dalton points (believed by some archeologists to be late Paleo-Indian or transitional), site 22Lw514 may represent the earliest Archaic manifestation in the study area. The Cedarland Plantation Site (22Ha506) has been designated as the type site for the Late Archaic Pearl River Phase by Gagliano (1966).

The greater number of Archaic sites over the previous period suggests that larger numbers of people were exploiting the resources of the study area. The Cedarland site with its broad array of artifact types is the first hint of permanence in the area. Although the number of sites in the corridor is presently small, future surveys should reveal additional sites of this period.

8.1.1.3 Poverty Point Period

According to MDAH site forms, two recorded sites in the study area (22Ha501, 22Hi512) contain diagnostic artifacts of this period. The Claiborne site (22Ha501) has been defined as a possible regional center which maintained close contact with the Poverty Point type site and participated in its trade network and cultural organization (Webb 1977:27). The Wills site (22Hi512) is atypical in that it is apparently located outside of one of the major interaction spheres.

The Poverty Point culture signalled the beginnings of extensive trade networks and interaction among sites apparently tied together culturally. With the emergence of the Claiborne site as a regional center, the Pearl River mouth area and environs were successfully exploited for the first time by a population which appears to have been permanent. The Wills site, located approximately 145 miles upriver, may be representative of a satellite site served by Claiborne. This is consistent with Brain's (1971:50) "phenomenon of the bottomlands" theory which suggested that Poverty Point sites intentionally spread lineally along rivers in response to the demand for exotic materials. This hypothesis might be tested by research designs constructed to search high probability areas along the Pearl River where additional sites of this period might be found.

8.1.1.4 Tchefuncte Period

According to MDAH site forms, four recorded sites in the study area contain components of this period. The most notable of these is the Ancient Earthwork Fortification site (22Ha515). It is believed by Williams (n.d.) that construction of these large earthworks began sometime during the Tchefuncte period. The remaining two sites have been classified as Tchefuncte on the basis of ceramics.

Although the presence of Tchefuncte ceramics at the Wills site and in the vicinity of Claiborne demonstrates that certain parts of the study area continued to be occupied during this period, the lack of major Tchefuncte sites suggests that these locales may not have remained as desirable as in Poverty Point times. The increased population at the Claiborne site, for example, could have exhausted the local resources causing a shift in population away from the coastal area. According to Haag (1978:5), the center of Tchefuncte culture originated in the Lake

Pontchartrain area. This new population center may have drawn people from the Claiborne site as well as other areas. If the Wills site was a satellite of Claiborne (or at least influenced by it), then any change in this site would affect it also. The decline of the Claiborne site may have forced the inhabitants at Wills to abandon their location or caused a change in adaptative strategies.

8.1.1.5 Marksville Period

This period is not well represented in the study area. Based on MDAH site forms, only two sites in the study area (22Ha504, 22Ha515) have produced artifacts diagnostic of the period. The Ancient Earthwork Fortification site (22Ha515) has produced Marksville ceramics and it is believed by Williams (n.d.) that the major portion of these large earthworks were constructed during this period. The other site (22Ha504) represents a shell midden which produced Marksville ceramics.

The only Marksville occupation in the study area is at the mouth of the Pearl River, an area which apparently remained a desired location for settlement. Marksville culture, believed to have originated in the Ohio Valley and spread southward, may have entered the study area through the Rigolets and affected the small groups still inhabiting the area. Surveys with research designs constructed to locate Marksville sites in other areas of the corridor will provide additional information.

8.1.1.6 Baytown Period

Three recorded sites in the study area have been classified as Baytown. Sites 22Cp516 and 22Ha500 have been placed in this classification based on the presence of ceramics (22Cp516 has produced a single sherd). Site 22Cp524 is referred to as Baytown due to the presence of a possible mound of this period.

Although evidence for this period is virtually nonexistent, sites may be discovered through future surveys. Additional research at known locations may reveal that some of those sites referred to on site forms as "Woodland" belong to this period.

8.1.1.7 Coles Creek Period

According to MDAH records, there are no Coles Creek sites recorded in the study area. Additional research is needed before assuming that this period is not represented.

8.1.1.8 Mississippian Period

According to MDAH records, five sites (22Ha515, 22Hi512, 22Lw511, 22Lw514 and 16WA8) in the study area belong to this period. These sites extend from the mouth of the Pearl River (22Ha515) to Jackson, Mississippi (22Hi512). Two of the sites (22Ha515, 22Lw511) have been classified as Mississippian on the basis of mounds and associated artifacts, two sites (22Hi512, 16WA8) have produced only Mississippian ceramics and no information is given on the MDAH site form for the basis of including site 22Lw514 in this period.

The fact that Mississippian sites have been located virtually the entire length of the Pearl River suggests that the entire Pearl River Basin may have been utilized by Mississippian populations. Additional research may reveal a high intensity of utilization of the Basin during this time.

8.2 Historic Sites

Other than those sites on the National Register of Historic Places and a few bridges which have been recorded, virtually no historic sites have been documented in the study area. Only one site in the study area (22Ha515), has been recorded as containing an historic component. At this site artifacts belonging to an historic Indian occupation (possibly Acolapissa) were found.

It is quite likely that this gap in the record is reflective of a recording bias. It is not uncommon for historic debris to be ignored while prehistoric artifacts are being collected and recorded. A change in recording practices in the study area should reveal numerous sites with historic components.

9. RESEARCH PROBLEMS AND GAPS IN THE RECORD

Several kinds of problems were encountered during the literature/background search of the Pearl River Basin. Sites improperly recorded, duplicate numbers and the absence of recorded sites on U.S.G.S. maps are examples. Basically, this study revealed a lack of research in the study area.

One of the major problems in the study area is the obvious sampling bias that has been imposed on Pearl River. This bias becomes evident when the maps, with the sites clustered almost exclusively in the Jackson area and around the mouth of the Pearl, are compared with the list of surveys so far conducted. Since the history of Euro-American occupation has been in those areas, it follows that the bulk of land alteration and therefore accidental discovery of archeological sites would fall in and around the city of Jackson and the mouth of the Pearl River. Due to this sampling bias, a true measure of the archeological resources of the Pearl River Basin cannot be taken at this time.

9.1 Data Collection (Prehistoric)

Archeological sites are recorded primarily through surveys and data obtained from informants.

9.1.1 Archeological Surveys

No major archeological surveys have been conducted in the study area. Only 16 surveys, typically small and concerned with such areas as bridge replacements and construction sites, etc., have been performed. A total of 13 sites have been recorded as a result of these surveys (Table 7-1).

9.1.2 Sites Recorded By Other Means

The remaining 26 sites in the study area were brought to the attention of the State Historic Preservation Officer by various means. Some sites were recorded on the basis of information provided by collectors. In these instances sites were not actually visited by professional archeologists. In other cases archeologists visited the sites and recorded them.

9.2 Data Collection (Historic)

Although some major surveys are ongoing, most of these projects have not been completed. A recording bias in the past has led to the exclusion of sites in some areas of the corridor. Twelve of the 15 sites in the National Register of Historic Places, for example, are in the city limits of Jackson, Mississippi. None have been recorded in Louisiana.

9.2.1 Architecture Surveys

Statewide architecture surveys of Louisiana and Mississippi have been initiated and are ongoing. In Louisiana, none of the parishes in the study area has received any attention at this time. Thirteen of the 15 National Register of Historic Places sites in the study area were recorded as a result of the Mississippi survey. None of the counties in the state has been completely surveyed.

In 1980, Louisiana State University conducted a Log Cabin Survey of the Florida Parishes (Feliciana excluded). A report has not been published at this time (Dr. Jay Edwards 1982: personal communication).

9.2.2 Bridge Surveys

In 1979, all of the bridges in Louisiana were recorded and categorized by the Department of Transportation and Development in Baton Rouge. In 1980, a survey designed to locate and record the most significant bridges in Louisiana in terms of architectural and historical importance was initiated by the Division of Archeology and Historic Preservation in Baton Rouge. None of the bridges in the study area has been studied at this time.

In 1980, a comprehensive bridge survey of Mississippi was initiated by the Mississippi Department of Archives and History. This survey was designed to record all bridges in the state built before 1930. At the present time only state-maintained bridges have been recorded. Not one is in the study area.

9.3 Data Recording

Several problems were encountered when dealing with recorded sites in the study area. Discrepancies included such areas as site locations, numbers and documentation.

9.3.1 Sites Not On U.S.G.S. Maps

At least eight officially recorded sites are not accurately plotted on U.S.G.S. maps at the Mississippi Department of Archives and History. Information concerning the location of seven sites (22Ha500, 22Ha504, 22H1510, 22H1526, 22Pr500, 22Ra504 and 22Ra508) is limited to sections or quarter sections only.

The location of two sites (22Lw500, 22Lw504) has been estimated. Circles on the U.S.G.S. maps at the Mississippi Department of Archives and History plotted in sections corresponding to those for these sites have been labelled accordingly.

9.3.2 Unofficial Sites On U.S.G.S. Maps

A total of 26 open circles, representative of site locations, containing no state numbers are present on U.S.G.S. maps used in this study. Nineteen site locations are depicted with no numbers. Six

sites possess unofficial numbers not on file at the Mississippi Department of Archives and History or Division of Archeology and Historic Preservation, Baton Rouge and one site has a duplicate number.

Two of the sites recorded during the Rands (1958) survey received the same official number. When this mistake was noted, the Flowood Site #2 was given the official state number of 22Ra546.

Confusion exists concerning the two prehistoric sites in the National Register of Historic Places. The Mill Creek Site is listed in the Register as 22Lw510. According to the site form on file at the Mississippi Department of Archives and History, it is known as 22Lw511.

The Jackson Landing Site is also an enigma. This National Register site is in reality a district encompassing several individual sites. It is listed on the Nomination Form as 22Ha515. However, the Ancient Earthwork Fortification Site (one of the sites within this Register district) is given the same number on the site form on file at M.D.A.H.

9.3.3 Documentation

9.3.3.1 Site Reports

Virtually all of the surveys in the study area produced simply letter reports. Only Rands (1958) described his activities in more detail. The survey by Chambers (1935) was documented by an unpublished journal. This manuscript is on file at the Mississippi Department of Archives and History.

9.3.3.2 Site Forms

Due to the absence of site reports dealing with the study area, the information presented on site forms becomes very important. Unfortunately, many forms have not been completely filled out. For example, UTM Coordinates were available for only one site (22Lw511). In the past, surveyors did not have official forms to use as guides and as a result, many sites were recorded by name and/or number only. Also, several changes in the state numbering system of Mississippi have taken place. It is not common practice to record surveys on U.S.G.S. maps and this has created a problem in determining areas surveyed.

9.3.3.3 Other Documentation

No summaries or syntheses of the Pearl River Basin have been compiled. The only major work dealing with the study area is Gagliano's (1980) study of the Pearl River Mouth area. Information relevant to the study area must be obtained from works dealing with broader areas such as those written about the Lower Mississippi Valley.

10. IMPACT OF PROPOSED ACTIONS ON CULTURAL RESOURCES AND RECOMMENDATIONS

10.1 Removal of Encroachments

Under this plan three separate actions have been proposed. They are 1) modification of the river channel at the sanitary landfill, 2) removal of the ICG Railroad Bridge and embankment and 3) modification at the State Highway 25 Bridge.

10.1.1 Modification of River Channel At Sanitary Landfill

This area consists of hilly terrain. The elevation varies from 250 to 270 feet A.M.S.L. Disturbance of cultural materials could result from 1) erosion due to removal of vegetation and topsoil, 2) removal of existing land surfaces through channel widening, 3) covering up of existing land surfaces through deposition of waste materials, 4) erosion due to greater stream velocity and re-establishment of natural river channel and 5) vehicular traffic.

No sites have been recorded in the area and no systematic surveys have been made. However, hilly terrain represents a likely area for settlement and it is recommended that a cultural resources survey of the impact area be carried out prior to modification.

Included in the area to be impacted is the present sanitary landfill for the city of Jackson, Mississippi. Due to the presence of cultural materials within the landfill, this feature possesses the potential for providing important information concerning the history of the city. However, if the dump is less than 50 years old it will not be eligible for inclusion on the National Register of Historic Places. Also, methodology employed at the dump may have mixed cultural materials from different time periods to such an extent that no meaningful information may be obtainable. Therefore, it is recommended that the initial date of the landfill be determined as well as work practices in an attempt to determine whether the site is likely to meet the requirements for inclusion on the National Register of Historic Places.

10.1.2 Removal of the ICG Railroad Bridge

The terrain on the west side of the area consists of bluffs of approximately 250 feet A.M.S.L. The terrain on the east side consists of lower elevations, is more level and less likely an area for aboriginal settlement. Disturbance of cultural materials could result from erosion due to removal of vegetation and topsoil and vehicular traffic.

No sites have been recorded in the area and no systematic surveys have been conducted. It is recommended that the impact area be surveyed prior to modification activities. The ICG Railroad Bridge should be documented and its significance assessed in terms of National Register of Historic Places criteria.

10.1.3 Modification at the State Highway 25 Bridge

The terrain in this area is hilly with bluffs reaching to heights of 275 feet A.M.S.L. Disturbance of cultural materials could result from erosion due to removal of vegetation and topsoil and vehicular traffic.

The area to be modified is located within the limits of Rand's (1958) Pearl River Reservoir survey. Due to the fact that no sites were recorded by Rands during the course of his survey, it is not anticipated that archeological materials will be discovered. It is recommended, however, that the bridge be documented and its significance assessed in terms of National Register of Historic Places criteria. The removal of the modern landfill should not be monitored unless it has been in operation for more than 50 years. The work practices involved in creating this landfill should be documented in order to ascertain whether or not it meets National Register of Historic Places criteria.

10.2 Clearing the Floodway

Five separate areas along the Pearl River are considered for flood clearing operations. Under this plan both banks of the river would be cleared in order to provide a floodway varying in width from 1,500 feet (457.3 meters) to 1,700 feet (518.3 meters) on each side of the center line. All trees and brush would be removed but the root systems would not be grubbed. The cutover bank area would be seeded to prevent scour from overbank flows and the banks at bridge footings would be protected by riprap in order to prevent erosion from increased velocities.

10.2.1 Plan A

This design would affect the river from mile 285.15 to mile 289.62. It would require the acquisition and clearing of 970 acres (392.6 hectares) and erosion protection for the cleared area and at six highway and two railroad bridges.

The terrain consists of bluffs, hills and lowlands. Disturbance of cultural materials could result from short-term erosion due to removal of vegetation and topsoil as well as vehicular traffic. Although no systematic surveys have been conducted in the area, one site, 22Ra527, has been recorded. This site exists on the U.S.G.S. maps only. There is no site form or other information available at this time. It is recommended that this site be carefully examined in order to see if it warrants testing or if it meets National Register of Historic Places criteria. It is recommended that a cultural resources survey of the impact area be carried out prior to clearing operations.

10.2.2 Plan B

This design would affect the river from mile 285.15 to mile 290.54. It would require the acquisition and clearing of 1,410 acres (570.6 hectares) and erosion protection for the cleared area and at six highway and three railroad bridges. Disturbance of cultural materials could result from short-term erosion due to removal of vegetation and topsoil and vehicular traffic.

The terrain is similar to that described in Plan A. Although no systematic surveys have been conducted in the area, one site, 22Ra527, has been recorded. It is recommended that a cultural resources survey of the area to be impacted be conducted prior to clearing operations and site 22Ra527 be examined in order to ascertain if it meets National Register of Historic Places criteria.

10.2.3 Plan C

This design would affect the river from mile 285.15 to mile 292.66. It would require the acquisition and clearing of 2,110 acres (853.9 hectares) and erosion protection for the cleared area and at seven highway bridges. Disturbance of cultural materials could result from short-term erosion due to removal of vegetation and topsoil and vehicular traffic.

The terrain is similar to that described in Plan A. Four sites, 22Hi512, 22Ra502, 22Ra527 and 22Ra546, have been recorded in the area. Portions of the area fall within Rand's (1958) Pearl River Reservoir survey. According to information on the M.D.A.H. site forms, sites 22Ra502 and 22Ra546 have been determined to be ineligible for the National Register of Historic Places. It is recommended that site 22Ra527 be examined to determine if it meets the requirements for the National Register of Historic Places. According to Sam McGahey (1981: personal communication), 22Hi512 is virtually destroyed, therefore, there is no reason for further work at this site. It is recommended that a cultural resources survey of the impact area not surveyed by Rands be conducted prior to clearing operations.

10.2.4 Plan D

This design would affect the river from mile 285.15 to mile 301.80. It would require the acquisition and clearing of 4,000 acres (1628.8 hectares) and erosion protection for the cleared areas and at seven highways and three railroad bridges. Disturbance of cultural materials could result from short-term erosion due to removal of vegetation and topsoil and vehicular traffic.

The terrain is similar to that described in Plan A. Six sites, 22Hi510, 22Hi512, 22Ra502, 22Ra508, 22Ra527 and 22Ra546, have been recorded in the area. Portions of the area fall within Rand's (1958) Pearl River Reservoir survey. According to information on the M.D.A.H. site forms, sites 22Hi510, 22Ra502, 22Ra508 and 22Ra546, have been determined ineligible for the National Register of Historic Places. Site 22Hi512 is virtually destroyed and does not need to be examined. Site 22Ra527, however, should be examined in order to see if it meets the criteria for inclusion on the National Register of Historic Places. It is recommended that a cultural resources survey of the impact area not surveyed by Rands be conducted prior to clearing operations.

10.2.5 Plan E

This design would affect the river from mile 278.86 to mile 301.80. It would require the acquisition and clearing of 5,550 acres (2246.1 hectares) and erosion protection for the cleared area and at seven highways and three railroad bridges. Disturbance of cultural materials could result from short-term erosion due to removal of vegetation and topsoil and vehicular traffic.

The terrain is similar to that described in Plan A. Six sites, 22Ha510, 22H1512, 22Ra502, 22Ra508, 22Ra527 and 22Ra546, have been recorded in the area. Portions of the area fall within Rand's (1958) Pearl River Reservoir survey. It is recommended that site 22Ra527 be examined in order to ascertain if it meets the criteria for the National Register of Historic Places (see comments above). It is recommended that a cultural resources survey of the impact area not surveyed by Rands be conducted prior to clearing operations.

10.3 Raising Existing Levees

Under this plan, existing levees would be raised in order to extend their protection beyond the limits of the 100-year flood stage. Damage to cultural materials could occur from borrow pits and vehicular traffic.

No sites are recorded in the immediate vicinity of the existing levees and no surveys have been conducted. It is recommended that both sides of the existing levees, borrow pits and all other areas to be impacted be surveyed for cultural resources prior to construction.

10.4 Additional Levees With Channel Improvement

10.4.1 Columbia and Morgantown, Mississippi

The Mississippi State Highway Department has undertaken to add 440 linear feet of relief opening in the U.S. Highway 98 crossing where the water surface differential was the greatest during the 1979 flood. Disturbance of cultural materials could result from 1) erosion due to removal of vegetation and topsoil, 2) erosion due to greater stream velocity, 3) covering up of existing surfaces by waste materials, removal of existing land surfaces by channel widening and 4) vehicular traffic and excavation of borrow pits.

No archeological sites have been recorded in the area and no surveys have been conducted. It is recommended that a cultural resources survey of all areas to be impacted be conducted prior to construction. Also, the bridge should be documented and its significance assessed in terms of National Register of Historic Places criteria.

10.5 Bank Erosion Control

At Jackson, Mississippi, a project to correct erosion at the Interstate 20 bridge over the Pearl River has been approved under Section 14 of the Flood Control Act of 1946. At Monticello, Mississippi a similar situation is being investigated at the U.S. Highway 84 bridge under the same authority. No sites have been recorded in the areas mentioned and no systematic surveys have been conducted. These proposed actions could result in the damage of cultural materials and it is recommended that a cultural resources survey be conducted prior to construction activities. Also, the bridge should be documented and its significance assessed in terms of National Register of Historic Places criteria.

10.6 Navigation

Three alternative plans have been proposed which would improve navigation in the East and West Pearl Rivers. Each of these plans assumes a channel 9 feet (2.7 meters) deep by 100 feet (30.5 meters) wide. Disturbance of cultural resources could result from 1) erosion due to removal of vegetation and topsoil, 2) removal of existing land surfaces due to channel widening, 3) covering up of existing land surfaces due to deposition of waste materials, 4) removal of existing land surfaces due to channel construction, 5) erosion due to greater stream velocity and re-establishment of original channels and 6) vehicular traffic.

Six archeological sites are located in the area. Five sites, 22Ha500, 22Ha501, 22Ha504, 22Ha506 and 22Ha515, are located near the mouth of the Pearl River and site 22Ha507 is located at Logtown. Sites 22Ha500, 22Ha504 and 22Ha515 are already on the National Register of Historic Places. Sites 22Ha501 and 22Ha506 have already been tested and reported on. Site 22Ha507, however, has not been examined. This site is reported to be situated beneath a standing structure. The site and the structure should be examined in order to see if they meet National Register of Historic Places criteria. Portions of the Pearl River mouth area have been surveyed (Chambers 1935). It is recommended that a cultural resources survey of all areas to be impacted be conducted prior to construction.

10.7 Provision of Water Exchange Between Pearl River and the Jackson Bendway

A structure has been proposed which would be incorporated into the existing East Jackson levee for the purpose of allowing the exchange of water and fish between the river and a cutoff bendway (oxbow) of the Pearl River. Disturbance of cultural materials could result from 1) erosion due to removal of vegetation and topsoil, 2) covering up of existing land surfaces due to deposition of waste materials and 3) vehicular traffic.

No sites have been recorded in the area and no surveys have been conducted. It is recommended that a cultural resources survey of all areas to be impacted be conducted prior to construction.

10.8 Pearl River Corridor Levee Recreation Concept

A plan for utilizing the ponding areas behind the alternative levee alignments for recreational and environmental purposes has been developed for the Pearl River Basin Development District. Damage to cultural materials could result from construction associated with this plan. It is recommended that a cultural resources survey of all areas to be impacted be conducted prior to construction.

10.9 Modify Pools Bluff and Boque Chitto Sills

A plan to modify certain areas of the Pearl River to improve the movements of striped bass and other anadromous fishes has been proposed. Construction activities associated with this plan may damage cultural materials. No archeological sites have been recorded in the area and no systematic surveys have been conducted. It is recommended that a cultural resources survey of all areas to be impacted be conducted prior to construction.

10.10 General Modifications

Generally speaking, the study area has not been well documented in terms of extant cultural resources. For example, no sites have been recorded in the Boque Chitto Wildlife Refuge and no surveys have been conducted in the area.

Any modification of the natural landscape will bring about the destruction and/or alteration of those cultural resources which might be present. For this reason, it is advised that all future plans which involve the alteration of the land include allowances for systematic cultural resources surveys and the possibility of monitoring of construction activities by archeologists.

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